

DRAFT
Field Observations Report
The Dayton Power and Light Company
J.M. Stuart Power Station
Manchester, Ohio
August 3 – August 7, 2009

Prepared for:

U.S. Environmental Protection Agency
1200 Pennsylvania Avenue
Washington, DC 20460



November 2009

Science Applications International Corporation (SAIC)
12100 Sunset Hills Road
Reston, VA 20190



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ETS-2-11(CE)

TABLE OF CONTENTS

1.0	Introduction	1
2.0	Background	2
2.1	<i>Purpose</i>	2
2.2	<i>Site and Process Description</i>	2
2.3	<i>Major Raw Materials and Waste Streams</i>	3
3.0	Daily Activities	7
3.1	<i>Monday, August 3th – Travel Day/Kickoff Meeting/Opening Conference</i>	7
3.2	<i>Tuesday, August 4th – Process Overview and Document Review</i>	8
3.3	<i>Wednesday, August 5th - Sampling</i>	8
3.4	<i>Thursday, August 6th – Sampling</i>	8
3.5	<i>Friday, August 7th – Sampling/Document Review/Closing Conference</i>	9
4.0	Sampling Activities and Field Observations	9
4.1	<i>Background on Bevill Wastes</i>	9
4.2	<i>Sample Collection Overview</i>	10
4.3	<i>Wednesday, August 5th Sampling Activities</i>	15
4.3.1	<i>Sample JW-1</i>	15
4.3.2	<i>Sample JW-2</i>	16
4.3.2	<i>Sample JS-1</i>	17
4.3.3	<i>Sample JW-3</i>	18
4.3.4	<i>Sample JS-2</i>	19
4.4	<i>Thursday, August 6th Sampling Activities</i>	20
4.4.1	<i>Sample JW-4</i>	20
4.4.2	<i>Sample JS-3</i>	21
4.4.3	<i>Sample JW-5</i>	22
4.4.4	<i>Sample JW-6</i>	23
4.4.5	<i>Sample JS-4</i>	24
4.4.6	<i>Sample JW-7</i>	25
4.4.7	<i>Sample JW-8</i>	26
4.4.8	<i>Sample JW-9</i>	27
4.4.9	<i>Sample JW-10</i>	28
4.4.10	<i>Sample JW-11</i>	29
4.4.11	<i>Sample JW-12</i>	30
4.4.12	<i>Sample JW-13</i>	31
4.4.13	<i>Sample JS-5</i>	32
4.4.14	<i>Sample JW-14</i>	33
4.5	<i>Friday, August 7th Sampling Activities</i>	34
4.5.1	<i>Sample JW-15</i>	34
4.5.2	<i>Sample JW-16</i>	35
4.5.3	<i>Sample JW-17</i>	36
4.5.4	<i>Sample JW-18</i>	37
4.5.5	<i>Sample JW-19</i>	38
4.6	<i>Sample Packaging and Shipment</i>	39
5.0	Analytical Results	39
5.1	<i>TCLP Analytical Results</i>	39

5.2	<i>Total Analytical Results</i>	40
5.3	<i>Reliability of Analytical Results</i>	42
5.3.1	Sample Receipt	42
5.3.2	VOC Analytical Review	42
5.3.3	SVOC Analytical Review	42
5.3.4	Pesticide Analytical Review	43
5.3.5	Herbicide Analytical Review	44
5.3.6	PCB Analytical Review	44
5.3.7	Metals Analytical Review	44
5.3.8	Wet Chemistry Review	45
5.4	<i>Summary of Data Usability and Limitations</i>	45
6.0	Regulatory Review	46
6.1	RCRA	46
6.2	EPCRA	46
6.2.1	Tier I and II	46
6.2.2	Section 302 Notification	47
6.2.3	Toxics Release Inventory (TRI)	47
6.3	CWA	48
6.3.1	Spill Prevention, Control, and Countermeasure (SPCC) Plan and Facility Response Plan (FRP) Review	50
6.3.2	Storm Water Pollution Prevention Plan (SWPPP) and National Pollutant Discharge Elimination System (NPDES) Review	51
7.0	References	57
	APPENDIX A: GOOGLE EARTH PHOTOGRAPHS	58
	APPENDIX B: CHAIN OF CUSTODY FORMS	63
	APPENDIX C: LAB RESULTS	77
	APPENDIX D: COMPLETE LAB DATA PACKAGE	85

Facility Name: J.M. Stuart Station

Facility Address: 745 U.S. 52
Manchester, OH 45101

Facility Operator: The Dayton Power and Light Company

Owner: The Dayton Power and Light Company (35%)
Duke Energy-Ohio, Inc. (39%)
Columbus Southern Power Company (26%)

Owner Address: The Dayton Power and Light Company
1065 Woodman Drive
Dayton, OH 45432

Duke Energy-Ohio, Inc.
139 East Fourth Street
Cincinnati, OH 45202

Columbus Southern Power Company
1 Riverside Plaza
Columbus, OH 43215

Dates of Inspection/Sampling: August 3 - August 7, 2009

Inspectors: Mike Beedle, EPA Region 5 (Lead)
Mark Conti, EPA Region 5 (CWA)
Amber Steed, SAIC
Jerry Whittum, SAIC
Brandon Peebles, SAIC

Point of Contact: Troy Williamson, Environmental Health and Safety
Manager (J.M. Stuart Station)
Scott Arsentzen, Environmental Specialist (DP & L
Corporate)

1.0 Introduction

The Waste & Chemical Enforcement Division (WCED), Office of Civil Enforcement, in conjunction with the Office of Compliance and EPA Regions, has initiated an exploratory effort to investigate the extent to which companies in a variety of sectors may have engaged in the illegal disposal of hazardous waste in surface impoundments. This effort is consistent with WCED's goal to target and develop enforcement actions under the Resource Conservation and Recovery Act (RCRA), the Emergency Planning and Community Right-to-Know Act (EPCRA), and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), against persons engaged in significant non-compliance that substantially affects human health or the environment. WCED needs to gather and assess information related to surface impoundments; target facilities with surface impoundments based on risk and other factors;

inspect and investigate activities at targeted facilities; develop enforcement actions as appropriate; and assess the data and other information gathered through these efforts.

2.0 Background

2.1 *Purpose*

EPA inspected the J.M. Stuart Power Station (JMS) coal-fired power plant the week of August 3, 2009 to determine compliance with applicable regulations under RCRA, Clean Water Act (CWA), EPCRA and other statutes. The investigation also focused on determining what types of wastes are generated, how the wastes are managed, and how the wastes are disposed of. Science Applications International Corporation (SAIC) was tasked to assist in the investigation by providing technical support for EPA. Also, SAIC was tasked and prepared to collect water and soil samples at the facility. These samples were analyzed for compliance with RCRA, CWA, and other relevant statutes. This report summarizes the activities performed by SAIC in support of EPA. Information in this report is based on interviews with JMS personnel, site observations, and review of documents provided by JMS. Other sources of information are noted where applicable. Information presented in Sections 2.2 and 2.3 was provided by JM Stuart and DP& L personnel during the inspection.

2.2 *Site and Process Description*

The JM Stuart Generating Station is jointly owned by Duke Energy – Ohio Inc. (39%), the Dayton Power and Light Company (35%), and Columbus Southern Power Company (26%), and is operated by the Dayton Power and Light Company (DP&L). The JM Stuart Generating Station (Station) is located four miles east of Aberdeen, Ohio, along Highway 52, on the Ohio River primarily in Adams County with a very small western portion in Brown County. Figure 2-1 is an overhead photo of the Station site. The Station operates 24 hours per day, 7 days per week with about 430 employees. The Station can generate more than 2300 megawatts (MW). Table 2-1 describes the power generating units at the Station. Units 1 through 4 utilize approximately 6.25 million tons of coal per year. JM Stuart receives its coal by river barge. Approximately 6.326 tons of coal is received annually. The coal is offloaded from the barge by overhead conveyor either directly to the underground cracker pit or to the coal pile that feeds the cracker pit. The cracker pit feeds the two coal delivery conveyances through the underground bunkers to the surge bins. Coal from the surge bins goes to the silos, then to the pulverizers (roller mills), and then is fed to the unit boilers. Coal from different sources is blended to provide the maximum efficiency of the boilers and reduce emissions. No. 2 Fuel Oil is used for black start (initial startup) and flame stabilization. The fuel oil is received by tanker truck and stored in a 250,000 gallon aboveground storage tank.



Figure 2-1. Overhead Photo of JM Stuart Generating Station

Table 2-1. JM Stuart Generating Station Generating Units

Unit Number	Size (MW)	Began Operation	Fuel	Burner Type	Particulate Control	NO _x Control	SO ₂ Control
Unit 1	600	5/17/71	Coal fired	Low NOx	ESP	SCR	FGD
Unit 2	600	10/11/70	Coal fired	Low NOx	ESP	SCR	FGD
Unit 3	600	5/10/72	Coal fired	Low NOx	ESP	SCR	FGD
Unit 4	600	6/21/74	Coal fired	Low NOx	ESP	SCR	FGD

ESP = electrostatic precipitator

SCR = selective catalytic reduction using ammonia

FGD = flue gas desulfurization using limestone slurry – produces 700,000 – 800,000 tons per year of gypsum for river barge transport to a wallboard production facility (not owned by JMSS)

2.3 Major Raw Materials and Waste Streams

As shown in Table 2-2, JMSS utilizes coal, fuel oil, limestone, ammonia, lubricating oils, boiler chemicals, and cooling tower chemicals in the process of generating electricity. Coal and fuel oil fuel the boilers. The four units receive coal that is pulverized and fed into boilers where it is combusted to create heat in the fireside of the boiler. Water in tubes on the outside of the boiler (waterside) exchanges heat from the fireside and boils to form steam. The steam propels turbine blades used to generate electricity. Exhaust gases exit via stacks after treatment, individual to each boiler, to remove heat, particulates, nitrous oxides (NO_x), and sulfur dioxide (SO₂). Units 1

– 3 are once-through cooling units and Unit 4 uses closed cycle cooling with a natural draft cooling tower. Figures 2-2, 2-3, and 2-4 present simplified schematic waterflow diagrams. Section 6.3 discusses the water cycle in further detail. Particulate removal is accomplished by electrostatic precipitation (ESP). The resultant waste from the exhaust gas treatment and electrostatic precipitation processes is fly ash. NO_x is removed in the Selective Catalytic Reduction (SCR) process using ammonia sprayed onto a catalyst in the exhaust stack to reduce NO_x to form nitrogen. Limestone, transported to the site on river barges, is ground in ball mills, slurried, and sprayed into the wet flue gas desulfurization (FGD) system (countercurrent to exhaust gas flow) to scrub SO₂ from stack gases. Limestone reacts with SO₂ to form gypsum.

Table 2-2. JM Stuart Station Raw Materials

Raw Material	Purpose
Coal	Boiler fuel
Fuel Oil	Boiler fuel
Limestone	Flue gas desulfurization
Ammonia	NO _x removal from stack gasses
Lubrication Oil	Equipment lubrication

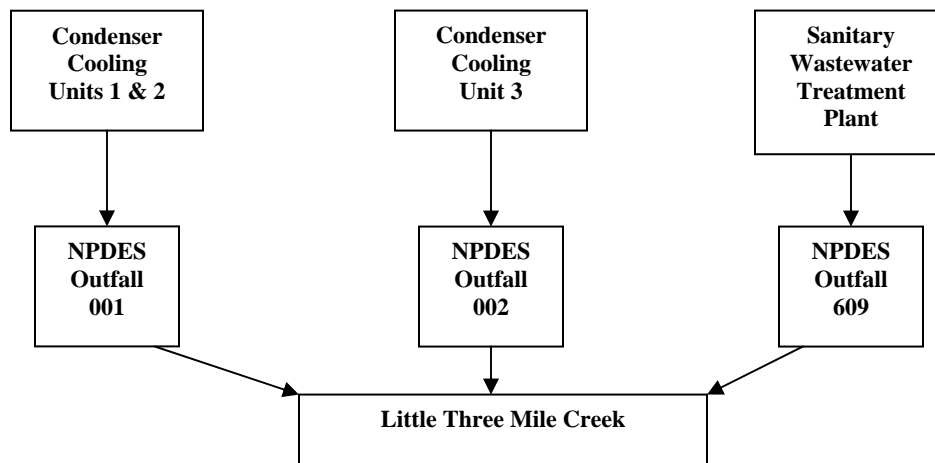


Figure 2-2. Schematic Diagram for Water Flows to NPDES Outfalls 001, 002, and 609

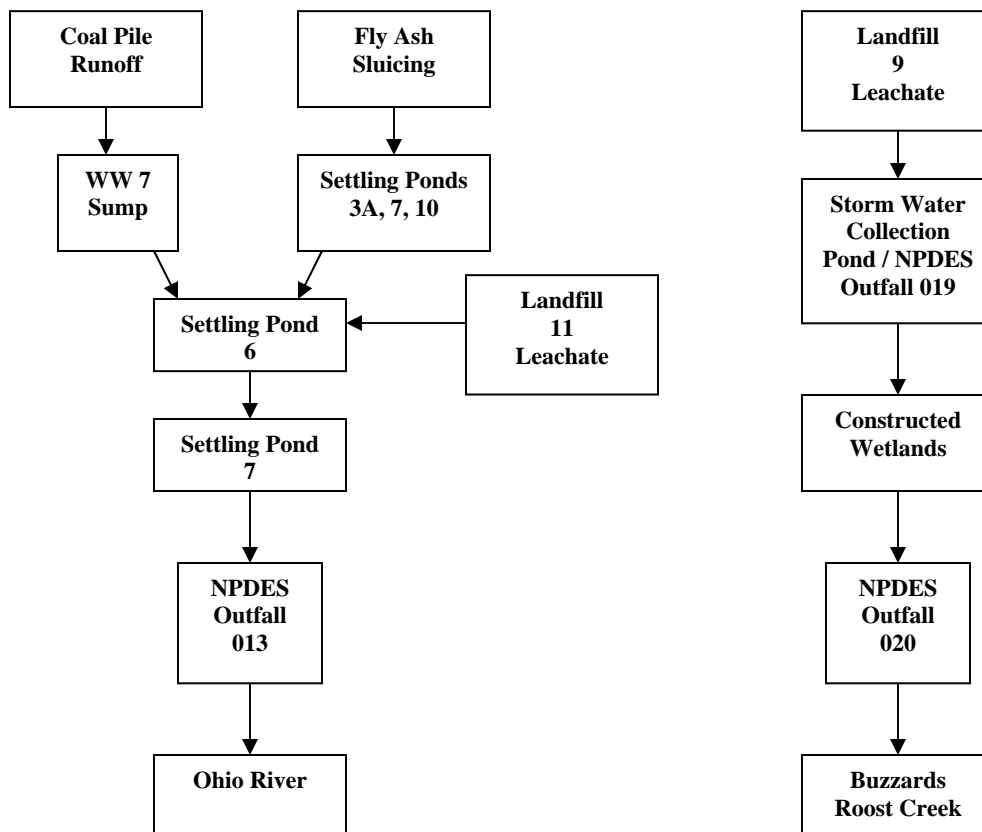


Figure 2-3. Schematic Diagram for Water Flows to NPDES Outfalls 013, 019, and 020

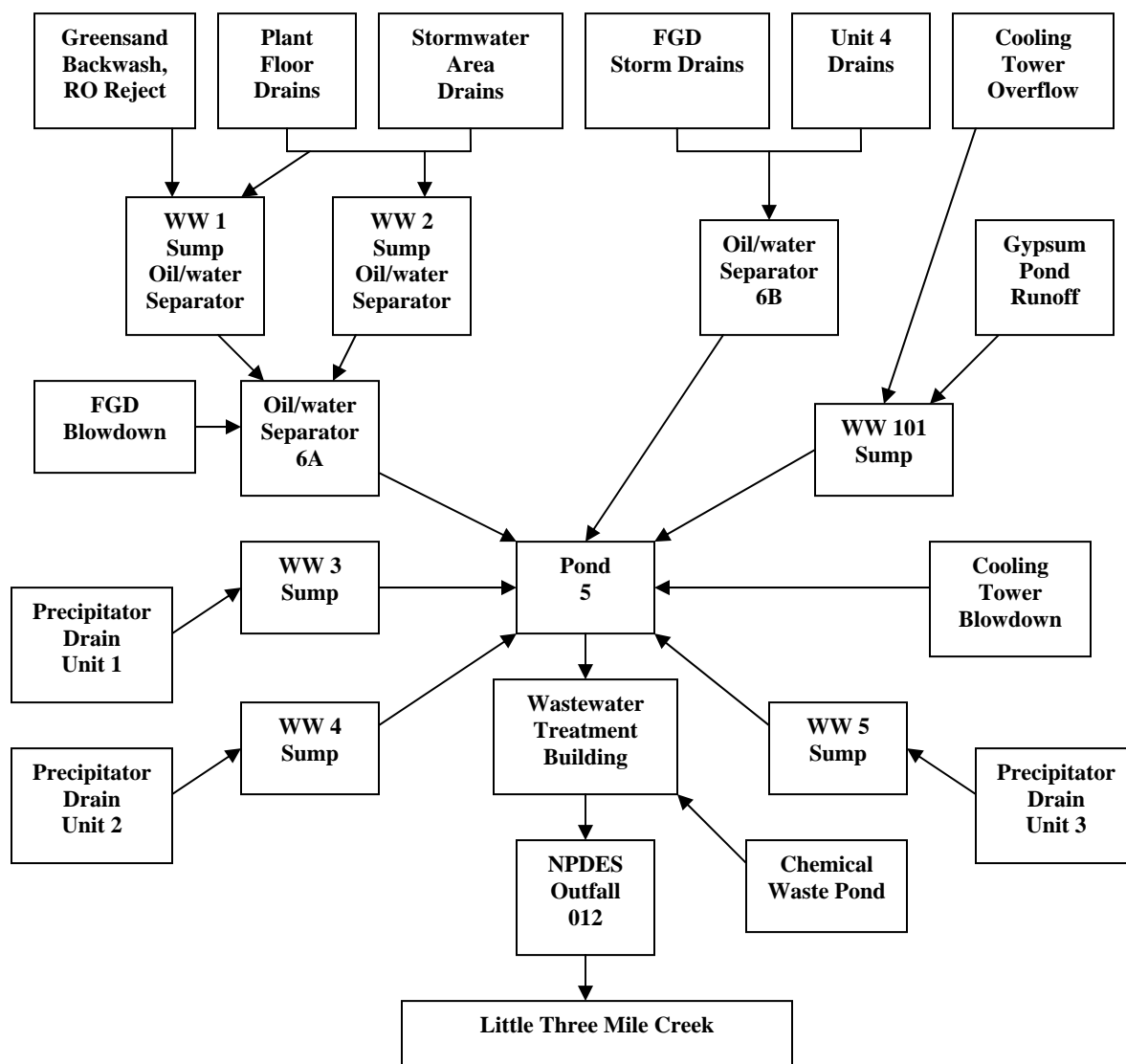


Figure 2-4. Schematic Diagram for Water Flows to NPDES Outfalls 012

Bottom ash and fly ash are two of the largest waste streams and are Bevill exempt RCRA wastes. The bottom ash from the boilers is sluiced for transport via pipes to Pond 5. Fly ash from the ESP is sluiced for transport via pipes to Ponds 3A, 7, and 10 alternately such that, while one pond is being filled, the second is idle and the third is being excavated. Coal pile runoff is also a Bevill exempt waste; it is collected and eventually flows to Pond 6.

Not-uniquely associated wastes include cooling tower blowdown, wastewater from the greensand filter backwash, reverse osmosis (RO) reject water, and wastewater from floor drains. Greensand filter backwash, RO reject water, and floor drain wastewater streams from the North side of the Power Plant Building are treated in oil/water separators located in WW 1 and WW 2 Sumps which flow to WW 6A Sump for additional oil/water separator treatment. The WW 6A Sump wastewater stream flows through the South Forebay to Pond 5 to the Wastewater Treatment Building where it is filtered before discharge.

Table 2-3. JM Stuart Station Major Waste Streams

Waste Stream	2008 Disposal	Deposition
Bottom Ash	145,421 tons	Pond 5, Recycle
Fly Ash	1,250,000 tons	Ponds 3A, 7, 10
Boiler Slag	N/A	On-site/Off-site beneficial reuse; on-site landfill
Pyrite	N/A	On-site landfill
Waste Gypsum	101,051 tons	Mason County Landfill if not sold
Cenospheres	N/A	Recycle
Oil from oil/water separators	N/A	Recycle

*N/A – Data not available

Approximately 226 tons of fly ash was sold and taken off-site in 2008. Boiler slag and pyrite are major non-aqueous Beville wastes produced at the Station. Boiler slag is comingled with bottom ash and used for on-site and or off-site beneficial reuse or disposal in the on-site landfill. Pyrite is disposed in the on-site landfill. Approximately 700,000 to 800,000 tons of gypsum formed in the FGD process is marketed annually. Off-specification or extra gypsum which is not sold is also transported to the Mason County Landfill for ultimate disposal.

3.0 Daily Activities

3.1 *Monday, August 3rd – Travel Day/Kickoff Meeting/Opening Conference*

Monday, August 3, 2009 consisted of a travel day, a kickoff meeting, an opening conference and a process overview of the JM Stuart facility. On Monday morning, the SAIC team of Amber Steed, Jerry Whittum and Brandon Peebles met with Mike Beedle and Mark Conti of the Environmental Protection Agency (EPA). A brief meeting was held to discuss an agenda for the inspections and sampling over the course of the week and review health and safety issues. The entire EPA/SAIC inspection team departed for the JM Stuart (JMS) facility. The inspection team arrived on-site at 1:05 PM. Mr. Beedle introduced himself to the security guard at the entrance and announced that EPA planned to conduct an inspection of the JMS facility. The security office required the entire team to watch a safety briefing in order to gain entrance to the facility. At 1:15 PM, the EPA/SAIC inspection team began viewing the safety briefing. The briefing lasted thirty minutes and ended at 1:45 PM. Troy Williamson, Environmental Health and Safety Manager, was the initial JMS point of contact for the inspection team. Mark Guerriero (Plant Manager, JMS), along with Scott Arentsen, (Environmental Specialist, DP&L Corporate), JoAnne Rau (Director of Environment and Safety Management, DP&L Corporate), Gary Bramble (Environmental Specialist, DP&L Corporate), Mr. Williamson, Craig Spangler (Material Handling Manager, JMS), and Harry McCann (Environmental Engineer, JMS) met the inspection team in a conference room located in the administrative building. At 2:00 PM, introductions were made between the EPA/SAIC inspection team and the JM Stuart facility representatives. Mr. Beedle stated the intention of the inspection and presented his credentials to the JMS representatives. It was confirmed that Mr. Arentsen would become the point of contact for any future questions and inquiries about the facility. Mr. Beedle then proceeded to start the opening conference. After the opening conference, the question and answer session about the facility began. Over the next two hours, Mr. Williamson and the other JMS representatives proceeded to provide the inspection team with detailed background information along with the process overview of the JMS facility. At 4:20 PM, the JMS representatives suggested that the inspection team take a “windshield” walkthrough of the facility. The “windshield” walkthrough consisted of the EPA/SAIC inspection team splitting up between two vehicles and taking a driving

walkthrough around the entire facility. At certain areas of the facility, the inspection team requested to stop and physically take a look around. The first agenda item on the site inspection was visiting each of the facility's ponds. After brief discussions at each of the ponds, the inspection team continued the site inspection. Other areas visited included the mitigated wetland, the landfills, the barge unloading system, the gypsum storage area, the forebays, the wastewater treatment building, the limestone pile, and the chemical pond. After the site inspection was completed, the team regrouped in the conference room. Following a brief discussion about the agenda for the rest of the week, the EPA/SAIC team departed the facility at 6:10 PM.

3.2 Tuesday, August 4th – Process Overview and Document Review

On Tuesday morning, August 4th, the entire EPA/SAIC inspection team arrived at the facility at 8:45 AM. Mr. McCann waited at the front gate and proceeded to escort the team onto facility grounds. After settling in the conference room, Mr. Beedle asked the JMS representatives to give a more detailed process overview of the facility, including waste stream flows and each pond's input and output process. This discussion lasted for the first half of the day. After a lunch break, the EPA/SAIC team proceeded to begin the document review for the JMS facility. A document/information request was provided to the facility several days prior to the inspection. Therefore, the facility representatives had most of the main documents needed for the review. However, as the review continued, more documents were requested and the JMS representatives obliged. Prior to leaving the facility, the EPA/SAIC team discussed the potential sampling locations for the rest of the week. The team also reiterated the types of sample containers that the facility needed in order to collect split samples. The EPA/SAIC team departed the facility at 5:15 PM.

3.3 Wednesday, August 5th - Sampling

On Wednesday morning, August 5th, the EPA/SAIC inspection team arrived on-site at 8:45 AM. The team met Mr. McCann at the front gate. The EPA/SAIC inspection team presented JMS representatives with an updated list of the water and soil sampling locations for the rest of the week. The JMS representatives then proceeded to compile all of their sample containers/equipment. The entire day was dedicated to collecting water and soil samples at the Chesterfield facility. The first sample was collected at 10:27 AM and the last sample for the day was collected at 3:27 PM. After the last sample was collected, all of the coolers were prepared for proper shipment. Further sampling details (locations, methods, times, etc.) can be found in Section 4.0. After properly preparing the coolers for shipment, Mr. Peebles and Mr. Whittum departed the facility at 5:05 PM in order to properly ship the coolers, while Ms. Steed inspected the sample points for the following day. Ms. Steed departed the facility at approximately 6:00 PM.

While SAIC was sampling throughout the day, Mr. Beedle and Mr. Conti each conducted their own separate inspections for RCRA and NPDES/Water, respectively.

3.4 Thursday, August 6th – Sampling

On Thursday morning, August 6th, the EPA/SAIC inspection team arrived on-site at 7:45 AM. The team met Mr. McCann at the front gate. Once again, the entire day was dedicated to collecting water and soil samples at the JMS facility. The first sample was collected at 8:10 AM and the last sample for the day was collected at 4:24 PM. After the last sample was collected, all of the coolers were prepared for proper shipment. Further sampling details (locations, methods,

times, etc.) can be found in Section 4.0. After properly preparing the coolers for shipment, the inspection team departed the facility at 6:15 PM.

While SAIC was sampling throughout the day, Mr. Beedle and Mr. Conti each conducted their own separate inspections for RCRA and NPDES/Water, respectively.

3.5 *Friday, August 7th – Sampling/Document Review/Closing Conference*

The EPA/SAIC inspection team arrived Friday morning at 8:00 AM. The first half of the morning was dedicated to collecting the remaining field samples. The first sample was collected at 8:25 AM and last sample for the facility was collected at 10:24 AM. Further sampling details (locations, methods, times, etc.) can be found in Section 4.0. Mr. Beedle, Mr. Conti, and Ms. Steed from the EPA/SAIC team began the closing conference with the JMS representatives at 9:30 AM. Mr. Guerriero, Mr. Arentson, Ms. Rau, Mr. Williamson, and Mr. Spangler represented the JM Stuart facility. During the closing conference, Mr. Peebles and Mr. Whittum completed the remainder of the sampling and began preparing the sample coolers for shipment. After the conclusion of the closing conference, the SAIC team finished their document review. The SAIC team also conducted a closing conference with Mr. Arentson, Ms. Rau, Mr. Williamson, Mr. Spangler, and Mr. McCann during which the SPCC, storm water, and remaining NPDES findings were provided to the site staff. The team departed the facility at 1:50 PM.

4.0 Sampling Activities and Field Observations

4.1 *Background on Bevill Wastes*

EPA is investigating the waste disposal practices at coal-fired power plants as they relate to the Bevill exclusion. The Bevill exclusion exempts from hazardous waste regulation independently managed large-volume wastes generated at coal-fired electric utilities that use coal as the primary fuel feed in their operations. These large-volume wastes are:

- fly ash waste;
- bottom ash waste;
- slag waste; and
- flue gas emission control waste.

Other wastes from the combustion of coal or other fossil fuels are also Bevill exempt from regulation under RCRA subtitle C. These include:

- coal combustion wastes generated at non-utilities;
- coal combustion waste from fluidized bed combustion technology;
- petroleum coke combustion wastes;
- waste from the combustion of mixtures of coal and other fuels;
- wastes from the combustion of oil; and
- wastes from the combustion of natural gas.

Finally, large-volume coal combustion wastes generated at electric utilities and independent power producing facilities that are co-managed with other coal combustion wastes are exempted. Common low-volume wastes fall into two categories: uniquely-associated and not-uniquely associated wastes. Common uniquely associated wastes are:

- coal pile runoff;
- coal mill rejects such as pyrite and off-specification coal;
- wastes from the cleaning of the exterior surfaces of heat exchangers;
- floor and yard drains including wash water and stormwater;
- wastewater treatment sludges; and
- boiler fireside (inside of boiler tubes) chemical cleaning wastes.

If these low-volume, uniquely associated wastes are not co-managed with large-volume fossil fuel combustion wastes, they may be non-exempt hazardous wastes if they are listed or exhibit a hazardous characteristic.

Low-volume wastes that typically are non-uniquely associated wastes and are not exempted are:

- boiler blowdown;
- cooling tower blowdown and sludge;
- intake and makeup water treatment and regeneration wastes;
- boiler waterside cleaning wastes;
- lab wastes;
- construction and demolition debris;
- general maintenance wastes; and
- spills and leaks of process materials that generate non-uniquely associated wastes.

In particular, EPA is interested in the disposal of non-uniquely associated wastes with Bevill excluded wastes and SAIC sampling focused on sources potentially meeting these parameters.

4.2 Sample Collection Overview

Samples were collected from the JM Stuart facility on Wednesday, August 5th (Section 4.3), Thursday, August 6th (Section 4.4), and Friday, August 7th (Section 4.5). Table 4-1 describes type and location of sludge/sediment samples as well as the number and type of sample containers filled for each sample. Table 4-2 describes type and location of wastewater samples, and the number and type of sample containers filled for each sample. Figure 4-1 is a copy of a site water flow diagram with sample locations identified.

Table 4-1. Sludge/Sediment Sampling Locations and Number and Type of Sample Containers Used

Sample ID	Sample Location	Volatiles	Ignitability/ Reactivity/ pH	SVOC/ PCB	TCLP	Metals
		4-oz Wide Mouth Glass (1)	4-oz Wide Mouth Glass (1)	4-oz Wide Mouth Glass (1)	16-oz Wide Mouth Glass (2)	4-oz Wide Mouth Glass (1)
JS-1	Coal Unloading Area from the Ohio River, near NPDES Outfall 016	X	X	X	X	X
JS-2	Approximately 20 feet North of the Cooling Tower Blowdown 24 inch HPDE Pipe entering Pond 5B	X	X	X	X	X
JS-3	South Forebay	X	X	X	X	X
JS-4	Southeast Corner of Chemical Waste Pond	---	---	---	X (1 16-oz wide mouth and 1 4-oz wide mouth)	---
JS-5	NPDES Outfall 020 at the Mitigated Wetland	X	X	X	X	X

Table 4-2. Wastewater Sampling Locations and Number and Type of Sample Containers Used

Sample ID	Sample Location	Volatiles	Ignitability	SVOC/PCB	TCLP	Reactivity/pH	Metals	TCLP	Pesticides/Herbicides	pH	Oil & Grease	TSS	Dissolved Hexavalent Chromium
		40-ml VOA (2)	4-oz Glass (1)	1-L Amber (2)	1-L Amber (3)	300-ml Plastic (1)	300-ml Plastic w/ HNO3 (1)	40-ml VOA (2)	1-L Amber (2)	300-ml Plastic (1)	1-L glass w/HCL (1)	300-ml Plastic (1)	300-ml Plastic w/sodium hydroxide buffer solution (1)
JW-1	NPDES Outfall 018	---	---	---	---	---	X	---	---	---	---	X	---
JW-2	Coal Unloading Area from the Ohio River, near NPDES Outfall 016	---	---	---	---	---	X	---	---	---	---	X	---
JW-3	Cooling Tower Blowdown from 24-inch HDPE Pipe Entering Pond 5B	X	X	X	X	X	X	X	X	---	---	---	---
JW-3B	Cooling Tower Blowdown from 24-inch HDPE Pipe Entering Pond 5B (Trip Blank)	X	---	---	---	---	---	---	---	---	---	---	---
JW-4	South Forebay	X	X	X	X	X	X	X	---	---	---	---	---
JW-5	WW-22 Sump	X	X	X	X	X	X	X	---	---	---	---	---
JW-6	Southeast Corner of Chemical Waste Pond	---	---	---	X	---	---	X	---	---	---	---	---
JW-7	NPDES Outfall 012 inside the Wastewater Treatment Plant (WWTP) Building	---	---	---	---	---	X	---	---	X	X	---	---
JW-8	WW-2 Inflow Pipe into WW-6A	X	X	X	X	X	X	X	---	---	---	---	---
JW-9	WW-1 Inflow Pipe into WW-6A	X	X	X	X	X	X	X	---	---	---	---	---
JW-10	FGD Blowdown at B Ballmill inside the Plant Building	X	X	X	X	X	X	X	---	---	---	---	---

Table 4-2. Wastewater Sampling Locations and Number and Type of Sample Containers Used

Sample ID	Sample Location	Volatiles	Ignitability	SVOC/PCB	TCLP	Reactivity/pH	Metals	TCLP	Pesticides/Herbicides	pH	Oil & Grease	TSS	Dissolved Hexavalent Chromium
		40-ml VOA (2)	4-oz Glass (1)	1-L Amber (2)	1-L Amber (3)	300-ml Plastic (1)	300-ml Plastic w/ HNO3 (1)	40-ml VOA (2)	1-L Amber (2)	300-ml Plastic (1)	1-L glass w/HCL (1)	300-ml Plastic (1)	300-ml Plastic w/sodium hydroxide buffer solution (1)
JW-11	NPDES Outfall 013 at Pond 7A	---	---	---	---	---	X	---	---	X	X		X
JW-12	Internal Outfall 019 at Leachate Collection Pond	---	---	---	---	---	X	---	---	---	---	X (pH was also tested)	---
JW-13	NPDES Outfalls 020 at the Mitigated Wetland	---	---	---	---	---	X	---	---	---	---	X (pH was also tested)	---
JW-14	WW-1 RO Reject Water	X	X	X	X	X	X	X	---	---	---	---	---
JW-15	NPDES Outfall 002	---	---	---	---	---	---	---		X	---	---	---
JW-16	NPDES Outfall 001	---	---	---	---	---	---	---		X	---	---	---
JW-17	WW-1 Green Sand Filter Backwash	X	X	X	X	X	X	X	---	---	---	---	---
JW-18	WW-1 Green Sand Filter Backwash (Field Duplicate)	X	X	X	X	X	X	X	---	---	---	---	---
JW-19	NPDES Outfall 609	---	---	---	---	---	---	---	---	X	---	---	---

4.3 Wednesday, August 5th Sampling Activities

This section provides specific information on each sample collected Wednesday, August 5, 2009.

4.3.1 Sample JW-1

Table 4-3 presents information for wastewater sample JW-1. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved Quality Assurance Project Plan¹ (QAPP).

Table 4-3. Sample JW-1

Location	NPDES Outfall 018
Date	August 5, 2009
Start Time	10:21 AM
Finish Time	10:29 AM
Sample Type	Grab
Matrix	Wastewater
GPS	N 38.63849, W 083.70053
Elevation	490 feet
pH	7.1
Temperature	24.4 C
Sample Collection Method	Sample containers were placed under the Outfall 018 pipe to obtain the sample. The wastewater was collected directly into the containers.

Figure 4-1 is a photograph of the JW-1 sampling location.



Figure 4-1. Sample JW-1: JMS NPDES Outfall 018.

4.3.2 Sample JW-2

Table 4-4 presents information for wastewater sample JW-2. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-4. Sample JW-2

Location	Coal Unloading Area from the Ohio River, near NPDES Outfall 016
Date	August 5, 2009
Start Time	11:12 AM
Finish Time	11:19 AM
Sample Type	Grab
Matrix	Wastewater
GPS	N 38.63390, W 083.69024
Elevation	555 feet
pH	7.02
Temperature	24.5 C
Sample Collection Method	A 1-liter Teflon dipper with a long Teflon handle was placed into the Ohio River, approximately 5 feet from the river bank and in the area where runoff from the coal unloading process was entering the river (runoff flow entering the river was estimated to be about 10 gallons per minute). The wastewater was poured from the Teflon dipper directly into each sample container.

Figure 4-2 is a photograph of the JW-2 sampling location.



Figure 4-2. Sample JW-2: Location of coal fines entering the river from the Coal Unloading Area, near NPDES Outfall 016.

4.3.2 Sample JS-1

Table 4-5 presents information for sediment sample JS-1. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-5. Sample JS-1

Location	Coal Unloading Area from the Ohio River, near NPDES Outfall 016
Date	August 5, 2009
Start Time	11:20 AM
Finish Time	11:42 AM
Sample Type	Grab
Matrix	Sediment
GPS	N 38.63390, W 083.69024
Elevation	555 feet
Sample Collection Method	A 1-liter Teflon dipper with a long Teflon handle was placed into the Ohio River sediment, approximately 5 feet from the river bank and in the area where runoff from the coal unloading process was entering the river (runoff flow entering the river was estimated to be about 10 gallons per minute). The dipper was used to scrape the bottom of the bank to obtain a sample. After a sufficient amount of sample was collected to approximately fill a 13-quart stainless steel bowl, the sample was mixed with a stainless steel spoon for one minute (until the consistency appeared homogenous). The sample was then scooped and packed into the sample bottles using the stainless steel spoon and trowel.

Figure 4-3 is a photograph of the JS-1 sampling location.



Figure 4-3. Sample JS-1: Location of coal fines entering the river from the Coal Unloading Area, near NPDES Outfall 016.

4.3.3 Sample JW-3

Table 4-6 presents information for wastewater sample JW-3. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP. SAIC also collected two trip blanks according to the QAPP; these samples were analyzed for volatiles. The containers were labeled as samples JW-3b and were filled at the sampling location using deionized water obtained from Mircobac Laboratories, Inc.

Table 4-6. Sample JW-3

Location	Cooler Tower Blowdown from 24-inch HDPE Pipe entering Pond 5B
Date	August 5, 2009
Start Time	2:28 PM
Finish Time	3:11 PM
Sample Type	Grab
Matrix	Wastewater
GPS	N 38.64165, W 083.70094
Elevation	526 feet
pH	8.32
Temperature	36.9 C
Sample Collection Method	A 1-liter Teflon dipper with a long Teflon handle was used to obtain a sample from the blowdown just before it entered Pond 5B. The wastewater was poured from the dipper directly into the sample containers.

Figure 4-4 is a photograph of the JW-3 sampling location.



Figure 4-4. Sample JW-3: Cooler Tower Blowdown from 24-inch HDPE Pipe entering Pond 5B.

4.3.4 Sample JS-2

Table 4-7 presents information for sediment sample JS-2. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-7. Sample JS-2

Location	Approximately 20 feet North of the Cooling Tower Blowdown 24-inch HDPE Pipe entering Pond 5B
Date	August 5, 2009
Start Time	3:13 PM
Finish Time	3:27 PM
Sample Type	Grab
Matrix	Sediment
GPS	N 38.64165, W 083.70094
Elevation	526 feet
Sample Collection Method	A 1-liter Teflon dipper with a long Teflon handle was placed into the Pond 5B sediment, approximately 20 feet north of the location of JW-3 and approximately 50 feet southwest of the bottom ash pipeline entering from Pond 5A West. The dipper was used to scrape the bottom of the pond to obtain a sample. After a sufficient amount of sample was collected to approximately fill a 13-quart stainless steel bowl, the sample was mixed with a stainless steel spoon for one minute (until the consistency appeared homogenous). The sample was then scooped and packed into the sample bottles using the stainless steel spoon and trowel.

Figure 4-5 is a photograph of the JS-2 sampling location.



Figure 4-5. Sample JS-2: Approximately 20 feet North of the Cooling Tower Blowdown 24-inch HDPE Pipe entering Pond 5B.

4.4 Thursday, August 6th Sampling Activities

This section provides specific information on each sample collected Thursday, August 6, 2009.

4.4.1 Sample JW-4

Table 4-8 presents information for wastewater sample JW-4. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-8. Sample JW-4

Location	South Forebay
Date	August 6, 2009
Start Time	8:10 AM
Finish Time	8:31 AM
Sample Type	Grab
Matrix	Wastewater
GPS	N 38.63899, W 083.69978
Elevation	530 feet
pH	7.38
Temperature	28.7 C
Sample Collection Method	A 1-liter Teflon dipper with a long Teflon handle was used to obtain a sample of the wastewater in the South Forebay. The wastewater was poured from the dipper directly into the sample containers. During sampling, pipes originating from WW-101, WW-6A, and WW-6B and entering the South Forebay were all running.

Figure 4-6 is a photograph of the JW-4 sampling location.



Figure 4-6. Sample JW-4: South Forebay.

4.4.2 Sample JS-3

Table 4-9 presents information for sediment sample JS-3. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-9. Sample JS-3

Location	South Forebay
Date	August 6, 2009
Start Time	8:34 AM
Finish Time	8:52 AM
Sample Type	Grab
Matrix	Sediment
GPS	N 38.63899, W 083.69978
Elevation	530 feet
Sample Collection Method	A 1-liter Teflon dipper with a long Teflon handle was placed into the South Forebay sediment. The dipper was used to scrape the bottom of the pond to obtain a sample. After a sufficient amount of sample was collected to approximately fill a 13-quart stainless steel bowl, the sample was mixed with a stainless steel spoon for one minute (until the consistency appeared homogenous). The sample was then scooped and packed into the sample bottles using the stainless steel spoon and trowel.

Figure 4-7 is a photograph of the JS-3 sampling location.



Figure 4-7. Sample JS-3. Location of sediment at the South Forebay.

4.4.3 Sample JW-5

Table 4-10 presents information for wastewater sample JW-5. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-10. Sample JW-5

Location	WW-22 Sump
Date	August 6, 2009
Start Time	9:21 AM
Finish Time	9:47 AM
Sample Type	Grab
Matrix	Wastewater
GPS	N 38.64095, W 083.69859
Elevation	585 feet
pH	7.82
Temperature	23.0 C
Sample Collection Method	A 1-liter Teflon dipper with a long Teflon handle was used to obtain a sample of the wastewater in WW-22. The wastewater was poured from the dipper directly into the sample containers.

Figure 4-8 is a photograph of the JW-5 sampling location.



Figure 4-8. Sample JW-5: WW-22 Sump.

4.4.4 Sample JW-6

Table 4-11 presents information for wastewater sample JW-6. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-11. Sample JW-6

Location	Southeast Corner of Chemical Waste Pond/Basin
Date	August 6, 2009
Start Time	10:05 AM
Finish Time	10:13 AM
Sample Type	Grab
Matrix	Wastewater
GPS	N 38.64038, W 083.69778
Elevation	481 feet
pH	5.88*
Temperature	25.2 C*
Sample Collection Method	A 1-liter Teflon dipper with a long Teflon handle was used to obtain a sample of the wastewater in the Chemical Waste Pond/Basin. The wastewater was poured from the dipper directly into the sample containers.

*EPA/SAIC samplers noticed the pH/temperature probe bulb was broken after the results had been taken for JW-6. As a result, it was determined that the lab would have to analyze a pH reading for the sample. It is unclear if the bulb was broken before or after the JW-6 sample. Therefore, it is unknown if the field measurements are accurate.

Figure 4-9 is a photograph of the JW-6 sampling location.



Figure 4-9. Sample JW-6: Southeast Corner of Chemical Waste Pond/Basin.

4.4.5 Sample JS-4

Table 4-12 presents information for sediment sample JS-4. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-12. Sample JS-4

Location	Southeast Corner of Chemical Waste Pond/Basin
Date	August 6, 2009
Start Time	10:14 AM
Finish Time	10:34 AM
Sample Type	Grab
Matrix	Sediment
GPS	N 38.63899, W 083.69978
Elevation	530 feet
Sample Collection Method	A 1-liter Teflon dipper with a long Teflon handle was placed into the South Forebay sediment. The dipper was used to scrape the bottom of the pond to obtain a sample. Sediment was placed into a stainless steel bowl and mixed with a stainless steel spoon for one minute (until the consistency appeared homogenous). The sample was then scooped and packed into the sample bottles using the stainless steel spoon and trowel.

Figure 4-10 is a photograph of the JS-4 sampling location.



Figure 4-10. Sample JS-4: Southeast Corner of Chemical Waste Pond/Basin.

4.4.6 Sample JW-7

Table 4-13 presents information for wastewater sample JW-7. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-13. Sample JW-7

Location	NPDES Outfall 012 inside the Wastewater Treatment Plant (WWTP) Building
Date	August 6, 2009
Start Time	11:00 AM
Finish Time	11:05 AM
Sample Type	Grab
Matrix	Wastewater
GPS	N 38.64131, W 083.69958 (reading taken outside west door of the WWTP Building)
Elevation	620 feet (reading taken outside west door of the WWTP Building)
Sample Collection Method	A 1-liter Teflon dipper with a long Teflon handle was used to obtain a sample of the wastewater at the Outfall 012 sampling point inside the WWTP building. The wastewater was poured from the dipper directly into the sample containers.

Figure 4-11 is a photograph of the JW-7 sampling location.



Figure 4-11. Sample JW-7: NPDES Outfall 012 inside the Wastewater Treatment Plant (WWTP) Building.

4.4.7 Sample JW-8

Table 4-14 presents information for wastewater sample JW-8. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-14. Sample JW-8

Location	WW-2 Inflow Pipe into WW-6A
Date	August 6, 2009
Start Time	11:24 AM
Finish Time	11:42 AM
Sample Type	Grab
Matrix	Wastewater
GPS	N 38.63662, W 083.69523
Elevation	728 feet
Sample Collection Method	A 5-gallon stainless steel bucket tied to a rope was lowered into WW-6A to obtain a sample from the WW-2 inflow pipe. Only wastewater discharging from the WW-2 pipe entered the bucket. When full, the bucket was raised out of WW-6A and wastewater was poured via a stainless steel funnel directly into each sample bottle.

Figure 4-12 is a photograph of the JW-8 sampling location.



Figure 4-12. Sample JW-8. WW-2 Inflow Pipe into WW-6A.

4.4.8 Sample JW-9

Table 4-15 presents information for wastewater sample JW-9. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-15. Sample JW-9

Location	WW-1 Inflow Pipe into WW-6A
Date	August 6, 2009
Start Time	11:42 AM
Finish Time	12:01 PM
Sample Type	Grab
Matrix	Wastewater
GPS	N 38.63662, W 083.69523
Elevation	728 feet
Sample Collection Method	A 5-gallon stainless steel bucket tied to a rope was lowered into WW-6A to obtain a sample from the WW-1 inflow pipe. Only wastewater discharging from the WW-1 pipe entered the bucket. When full, the bucket was raised out of WW-6A and wastewater was poured via a stainless steel funnel directly into each sample bottle.

Figure 4-13 is a photograph of the JW-9 sampling location.



Figure 4-13. Sample JW-9. WW-1 Inflow Pipe into WW-6A.

4.4.9 Sample JW-10

Table 4-16 presents information for wastewater sample JW-10. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-16. Sample JW-10

Location	FGD Blowdown at B Ballmill inside the Limestone Building
Date	August 6, 2009
Start Time	1:45 PM
Finish Time	2:02 PM
Sample Type	Grab
Matrix	Wastewater
GPS	N 38.63727, W 083.69586 (reading taken outside the east door of the Limestone Building nearest the B Ballmill FGD Blowdown Pipe)
Elevation	679 feet (reading taken outside the east door of the Plant Building nearest the B Ballmill FGD Blowdown Pipe)
Sample Collection Method	A 5-gallon stainless steel bucket tied to a rope was lowered beneath the discharge pipe for the B Ballmill FGD Blowdown. Only wastewater discharging from the B Ballmill pipe entered the bucket. When full, the bucket was raised out from under the discharge pipe and wastewater was poured via a stainless steel funnel directly into each sample bottle.

Figure 4-14 is a photograph of the JW-10 sampling location.



Figure 4-14. Sample JW-10: FGD Blowdown at B Ballmill inside the Plant Building.

4.4.10 Sample JW-11

Table 4-17 presents information for wastewater sample JW-11. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-17. Sample JW-11

Location	NPDES Outfall 013 at Pond 7A
Date	August 6, 2009
Start Time	2:35 PM
Finish Time	2:43 PM
Sample Type	Grab
Matrix	Wastewater
GPS	N 38.63007, W 083.67294
Elevation	Not taken
Sample Collection Method	A 1-liter Teflon dipper with a long Teflon handle was used to obtain a sample of the wastewater at Outfall 013. The wastewater was poured from the dipper directly into the sample containers.

Figure 4-15 is a photograph of the JW-11 sampling location.



Figure 4-15. Sample JW-11: NPDES Outfall 013 at Pond 7A.

4.4.11 Sample JW-12

Table 4-18 presents information for wastewater sample JW-12. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-18. Sample JW-12

Location	Internal Outfall 019 at Leachate Collection Pond
Date	August 6, 2009
Start Time	2:41 PM
Finish Time	2:42 PM
Sample Type	Grab
Matrix	Wastewater
GPS	Not taken
Elevation	Not taken
Sample Collection Method	A 1-liter Teflon dipper with a long Teflon handle was used to obtain a sample of the wastewater at Outfall 019. The wastewater was poured from the dipper directly into the sample containers.

Figure 4-16 is a photograph of the JW-12 sampling location.



Figure 4-16. Sample JW-12: Internal Outfall 019 at Leachate Collection Pond

4.4.12 Sample JW-13

Table 4-19 presents information for wastewater sample JW-13. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-19. Sample JW-13

Location	NPDES Outfall 020 at the Mitigated Wetland
Date	August 6, 2009
Start Time	3:05 PM
Finish Time	3:07 PM
Sample Type	Grab
Matrix	Wastewater
GPS	N 38.62936, W 083.67178
Elevation	519 feet
Sample Collection Method	A 1-liter Teflon dipper with a long Teflon handle was used to obtain a sample of the wastewater at Outfall 020. The wastewater was poured from the dipper directly into the sample containers.

Figure 4-17 is a photograph of the JW-13 sampling location.



Figure 4-17. Sample JW-13: NPDES Outfall 020 at the Mitigated Wetland.

4.4.13 Sample JS-5

Table 4-20 presents information for sediment sample JS-5. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-20. Sample JS-5

Location	NPDES Outfall 020 at the Mitigated Wetland
Date	August 6, 2009
Start Time	3:10 PM
Finish Time	3:28 PM
Sample Type	Grab
Matrix	Sediment
GPS	N 38.62936, W 083.67178
Elevation	519 feet
Sample Collection Method	A 1-liter Teflon dipper with a long Teflon handle was used to obtain sediment from the Mitigated Wetland. Sediment was obtained from the area surrounding Outfall 020 and was reached at approximately 3-foot depth. After a sufficient amount of sample was collected to approximately fill a 13-quart stainless steel bowl, the sample was mixed with a stainless steel spoon for one minute (until the consistency appeared homogenous). The sample was then scooped and packed into the sample bottles using the stainless steel spoon and trowel.

Figure 4-18 is a photograph of the JS-5 sampling location.



Figure 4-18. Sample JS-5: NPDES Outfall 020 at the Mitigated Wetland.

4.4.14 Sample JW-14

Table 4-21 presents information for wastewater sample JW-14. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-21. Sample JW-14

Location	WW-1 RO Reject Water
Date	August 6, 2009
Start Time	4:12 PM
Finish Time	4:24 PM
Sample Type	Grab
Matrix	Wastewater
GPS	N 38.63724, W 083.69135 (reading taken outside the west door of the Plant Building nearest the WW-1 RO)
Elevation	599 feet (reading taken outside the west door of the Plant Building nearest the WW-1 RO)
Sample Collection Method	Samples were either taken directly from the RO Reject Water spigot or by placing a 5-gallon stainless steel bucket tied to a rope beneath the spigot. When the bucket was full, wastewater was poured via a stainless steel funnel directly in each sample bottle.

Figure 4-19 is a photograph of the JW-14 sampling location.



Figure 4-19. Sample JW-14: WW-1 RO Reject Water.

4.5 Friday, August 7th Sampling Activities

This section provides specific information on each sample collected on Friday, August 7, 2009.

4.5.1 Sample JW-15

Table 4-22 presents information for wastewater sample JW-15. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-22. Sample JW-15

Location	NPDES Outfall 002
Date	August 7, 2009
Start Time	8:25 AM
Finish Time	8:30 AM
Sample Type	Grab
Matrix	Wastewater
GPS	N 38.64021, W 083.69176
Elevation	535 feet
pH	7.3*
Temperature	34.4 C*
TRC	Non-Detect*
Sample Collection Method	A bailer tied to a rope was used to obtain a sample of the wastewater at Outfall 002. The wastewater was poured from the bailer into a 5-gallon stainless steel bucket. From the bucket, wastewater was poured via a stainless steel funnel directly into each sample bottle.

*SAIC located a second pH and temperature probe and collected an additional field sample to obtain field pH and temperature measurements. Additionally, a total residual chlorine (TRC) measurement was also taken.

Figure 4-20 is a photograph of the JW-15 sampling location.



Figure 4-20. Sample JW-15: NPDES Outfall 002.

4.5.2 Sample JW-16

Table 4-23 presents information for wastewater sample JW-16. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-23. Sample JW-16

Location	NPDES Outfall 001
Date	August 7, 2009
Start Time	8:38 AM
Finish Time	8:48 AM
Sample Type	Grab
Matrix	Wastewater
GPS	N 38.63983, W 083.69086
Elevation	580 feet
pH	7.4
Temperature	36.3 C
TRC	Non-Detect
Sample Collection Method	A bailer tied to a rope was used to obtain a sample of the wastewater at Outfall 001. Since 001 receives a discharge from Units 1 and 2, a bailer sample was obtained from Unit 1 discharge and then from Unit 2 discharge, and so on. The wastewater from each unit was poured into a 5-gallon stainless steel bucket and homogenized. From the bucket, wastewater was poured via a stainless steel funnel directly into each sample bottle.

Figure 4-21 is a photograph of the JW-16 sampling location.



Figure 4-21. Sample JW-16: NPDES Outfall 001.

4.5.3 Sample JW-17

Table 4-24 presents information for wastewater sample JW-17. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-24. Sample JW-17

Location	WW-1 Green Sand Filter Backwash
Date	August 7, 2009
Start Time	10:02 AM
Finish Time	10:24 AM
Sample Type	Grab
Matrix	Wastewater
GPS	N 38.63724, W 083.69135 (reading taken outside the west door of the Plant Building nearest the WW-1 RO)
Elevation	599 feet (reading taken outside the west door of the Plant Building nearest the WW-1 RO)
Sample Collection Method	A 5-gallon stainless steel bucket tied to a rope was placed beneath the discharge pipe for the WW-1 Green Sand Filter Backwash. When full, the bucket was raised and wastewater was poured either directly into a sample bottle or via a stainless steel funnel into each sample bottle.

Figure 4-22 is a photograph of the JW-17 sampling location.



Figure 4-22. Sample JW-17: WW-1 Green Sand Filter Backwash.

4.5.4 Sample JW-18

Table 4-25 presents information for wastewater sample JW-18. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-25. Sample JW-18

Location	WW-1 Green Sand Filter Backwash (Field Duplicate sample to JW-17)
Date	August 7, 2009
Start Time	10:02 AM
Finish Time	10:24 AM
Sample Type	Grab
Matrix	Wastewater
GPS	N 38.63724, W 083.69135 (reading taken outside the west door of the Plant Building nearest the WW-1 RO)
Elevation	599 feet (reading taken outside the west door of the Plant Building nearest the WW-1 RO)
Sample Collection Method	A 5-gallon stainless steel bucket tied to a rope was placed beneath the discharge pipe for the WW-1 Green Sand Filter Backwash. When full, the bucket was raised and wastewater was poured either directly into a sample bottle or via a stainless steel funnel into each sample bottle.

Figure 4-23 is a photograph of the JW-18 sample location.



Figure 4-23. Sample JW-18: WW-1 Green Sand Filter Backwash.

4.5.5 Sample JW-19

Table 4-26 presents information for wastewater sample JW-19. SAIC personnel alternately collected samples for EPA/SAIC and JMS in accordance with the approved QAPP.

Table 4-26. Sample JW-19

Location	NPDES Outfall 609
Date	August 7, 2009
Start Time	9:17 AM
Finish Time	9:18 AM
Sample Type	Grab
Matrix	Wastewater
GPS	N 38.64063, W 083.69446
Elevation	554 feet
pH	6.7
Temperature	22.7 C
Sample Collection Method	A 1-liter Teflon dipper with a long Teflon handle was used to obtain a sample of the wastewater at Outfall 609. The wastewater was poured from the dipper directly into the sample bottles.

Figure 4-24 is a photograph of the JW-19 sample location.



Figure 4-24. Sample JW-19: NPDES Outfall 609.

4.6 Sample Packaging and Shipment

After initial sample collection, all of the sample containers were immediately placed into a cooler containing bagged ice until they could be packaged for shipment.

Sample packaging for shipment consisted of lining a cooler with a clean plastic trash bag and placing two 2-gallon Ziploc bags, approximately one-half full of ice on the bottom of the cooler inside the trash bag. A layer of large sample bottles were placed on top of the ice. Another layer of ice (in Ziploc bags) was added on top. The remaining sample containers were placed on top of the previous layer of ice. Finally, a third layer of ice (in Ziploc bags) was added on top, and the trash bag was sealed and secured by tying a knot and/or taping the bag shut. The chain of custody was properly completed for each sample location/cooler, inserted into a 2-gallon Ziploc bag which was sealed, and placed on top of the sealed trash bag inside the cooler. Copies of the chain of custody forms are located in Appendix C. The cooler was then taped shut with strapping tape. The custody seals were signed, dated, and placed on each cooler covered with a small piece of tape. Finally, the shipping air bill was properly completed and taped onto each cooler. This procedure completed the shipment process for each sample and its respective cooler.

During the entire sampling process (collection, packaging, etc.), SAIC followed the proper procedures outlined in the approved QAPP.

5.0 Analytical Results

Samples (20 aqueous and five solids) were collected at the JM Stuart facility between August 5-7, 2009. Samples were analyzed for volatile organic compounds (VOCs) by method SW8260, semivolatile organic compounds (SVOCs) by method SW8270, pesticides by SW8081, polychlorinated biphenyls (PCBs) by SW8082, herbicides by SW8151, metals by methods SW6010 and mercury by SW7470 for aqueous samples and SW7471 for solids. Toxicity Characteristic Leaching Procedure (TCLP) extracts were prepared as per SW846 1311 followed by analysis by the above methods, as appropriate. TCLP VOCs were evaluated based on the results of the total analyses adjusted for the dilution of the extraction fluid and results were all non-detect; therefore a separate ZHE extraction was not required (as per SW846 1311, 1.2).

The complete tables of the analytical lab results are located in Appendix C. The raw lab data reports from the laboratory can be found in Appendix D in an electronic format. Sections 5.1 and 5.2 below present analytical results when parameters were identified over their method detection limit.

5.1 *TCLP Analytical Results*

Table 5-1 presents a summary for selected TCLP analyses for aqueous and sediment (solid) samples collected at the JMS facility for only those parameters detected over their method detection limits. None of the sample results exceeds the corresponding TCLP regulatory limit. The only metals above detection limits were barium, cadmium, and chromium which have TCLP limits of 100 mg/l, 1 mg/l, and 5 mg/l, respectively. The only VOC above detection limits was benzene with a TCLP limit of 0.5 mg/l. All other parameters not summarized in Table 5-1, which were analyzed, had results below their detection limits.

Table 5-1. Selected TCLP Analytical Results: JMS Aqueous and Sediment (Solid) Samples

Field Sample ID		JW-10	JW-14	JW-17	JW-18	JW-3	JW-4	JW-5	JW-6	JW-8	JW-9	JS-1	JS-2	JS-3	JS-4	JS-5
Matrix	TCLP	Leachate	Leachate	Leachate	Leachate	Leachate	Leachate	Leachate	Leachate	Leachate	Leachate	Leachate	Leachate	Leachate	Leachate	Leachate
Sample Date	Regulatory	8/6/09	8/6/09	8/7/09	8/7/09	8/5/09	8/6/09	8/6/09	8/6/09	8/6/09	8/6/09	8/5/09	8/5/09	8/6/09	8/6/09	8/6/09
Units	Limits	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
TCLP Metals																
Barium	100	0.33	ND	ND	0.22	ND	ND	ND	ND	ND	ND	1.0	ND	ND	ND	ND
Cadmium	1	ND	0.038	ND	ND	ND	0.014	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.011	ND	ND
TCLP VOCs																
Benzene	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.014	ND	ND	ND	ND
*ND - Not Detected																

5.2 Total Analytical Results

Table 5-2 presents a summary of results for selected analytical results for aqueous and sediment (solid) samples collected at the JMS facility for only those parameters detected over their method detection limits. All other parameters not summarized in Table 5-2, which were analyzed, had results below their detection limits.

Table 5-2. Summary of Selected Analytical Results: JMS Aqueous and Sediment (Solid) Samples

Field Sample ID	JW-1	JW-10	JW-11	JW-12	JW-13	JW-14	JW-15	JW-16	JW-17	JW-18	JW-19	JW-2	JW-3	JW-3b	JW-4	JW-5	JW-6	JW-7	JW-8	JW-9	JS-1	JS-2	JS-3	JS-5
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Solid	Solid	Solid	Solid
Sample Date	8/5/09	8/6/09	8/6/09	8/6/09	8/6/09	8/6/09	8/7/09	8/7/09	8/7/09	8/7/09	8/7/09	8/5/09	8/5/09	8/5/09	8/6/09	8/6/09	8/6/09	8/6/09	8/6/09	8/6/09	8/6/09	8/6/09	8/6/09	8/6/09
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/kg	ug/kg	ug/kg	ug/kg
VOCs - Total	NT		NT	NT	NT		NT	NT			NT	NT					NT	NT						
Methylene Chloride		43				45			43	41			25	ND	42	27			40	41	ND	ND	ND	ND
Styrene		ND				ND			ND	ND			25	ND	ND	ND			ND	ND	ND	ND	ND	ND
Total Xylenes		ND				ND			ND	ND			ND	ND	ND	ND			ND	ND	1200	ND	ND	ND
o-Xylene		ND				ND			ND	ND			ND	ND	ND	ND			ND	ND	420	ND	ND	ND
Benzene		ND				ND			ND	ND			ND	ND	ND	ND			ND	ND	430	ND	ND	ND
Toluene		ND				ND			ND	ND			ND	ND	ND	ND			ND	ND	750	ND	ND	ND
m,p-Xylenes		ND				ND			ND	ND			ND	ND	ND	ND			ND	ND	810	ND	ND	ND
SVOCs - Total	NT		NT	NT	NT		NT	NT			NT	NT					NT	NT						
2-Methylnaphthalene		ND				ND			ND	ND			ND		ND	ND			ND	ND	1300	ND	ND	ND
Phenanthrene		ND				ND			ND	ND			ND		ND	ND			ND	ND	630	ND	ND	ND
Naphthalene		ND				ND			ND	ND			ND		ND	ND			ND	ND	690	ND	ND	ND
Metals - Total	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NT	NT	mg/l	mg/l	NT	mg/l	mg/l	NT	mg/l	mg/l	NT	mg/l	mg/l	mg/l	NT	NT	NT	NT
Aluminum	ND	66	0.28	2.1	0.52	ND			ND	ND		1.3	3.5		25	ND		ND	ND	0.53				
Arsenic	ND	ND	0.0089	0.0091	ND	ND			ND	ND		ND	ND		0.034	ND		ND	ND	ND				
Barium	0.081	0.43	0.26	0.13	0.099	0.22			0.14	0.15		0.061	0.11		0.22	0.021		0.05	0.075	0.05				
Beryllium	ND	0.012	ND	ND	ND	ND			ND	ND		ND	ND		0.0045	ND		ND	ND	ND				
Cadmium	0.0025	0.047	0.0027	0.0011	0.001	0.0032			0.0021	0.0021		0.00063	0.00099		0.022	ND		0.0055	0.0013	0.00068				
Calcium	220	3900	98	89	88	320			73	71		33	50		2200	14		640	100	48				
Chromium	ND	0.22	0.042	0.0019	ND	ND			ND	ND		ND	0.0028		0.084	ND		ND	ND	ND				
Cobalt	ND	0.074	ND	ND	ND	ND			0.012	0.013		0.0051	ND		0.031	ND		ND	ND	ND				
Copper	ND	0.14	0.003	0.0022	ND	ND			ND	ND		0.0043	0.13		0.073	0.0023		0.0049	0.0025	0.016				
Iron	ND	45	0.33	2.6	0.85	ND			1.6	1.8		2.1	5.2		17	0.23		ND	0.015	0.85				
Lead	ND	ND	ND	ND	ND	ND			ND	ND		ND	ND		0.097	ND		ND	ND	ND				
Magnesium	53	1000	14	25	25	60			13	13		11	17		520	3.9		95	20	11				
Manganese	ND	3.8	0.078	0.66	0.38	0.07			11	12		0.12	0.27		2	0.014		0.07	0.1	0.054				
Nickel	ND	0.62	0.014	ND	ND	ND			ND	ND		ND	ND		0.28	ND		0.034	ND	ND				
Potassium	16	42	9.7	5.4	5.1	7.6			1.7	1.7		2.9	4.8		25	1.2		6.1	2.5	2.1				
Selenium	ND	0.69	ND	ND	ND	ND			ND	ND		ND	ND		0.38	ND		ND	ND	ND				
Sodium	59	150	30	5.4	5.2	76			16	16		19	31		86	2.1		38	34	16				
Vanadium	ND	0.31	0.042	0.011	0.0016	ND			ND	ND		0.0019	0.0053		0.11	ND		ND	ND	ND				
Zinc	ND	0.24	ND	ND	ND	ND			ND	ND		0.044	0.015		0.11	0.01		ND	ND	0.0075				
Mercury	ND	0.0021	ND	0.0002	ND	ND			ND	ND		ND	ND		0.0016	ND		ND	ND	ND				
Wet Chemistry																								
pH	NT	7.0	7.7	7.7	7.5	7.8	7.7	7.2	7.6	7.3	6.8	NT	8.0	NT	7.3	8.3	7.6	7.6	7.8	7.7	7.6	8.0	7.6	6.8
% Solids	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	64.5	52.95	62.95	59.33
Ignitability	NT	>200 °F	NT	NT	NT	>200 °F	NT	NT	>200 °F	>200 °F	NT	NT	>200 °F	NT	>200 °F	>200 °F	NT	NT	>200 °F	>200 °F	>200 °F	>200 °F	>200 °F	>200 °F
Reactive Cyanide	NT	ND	NT	NT	NT	ND	NT	NT	ND	ND	NT	NT	ND	NT	ND	ND	NT	NT	ND	ND	ND	ND	ND	ND
Reactive Sulfide	NT	70	NT	NT	NT	ND	NT	NT	ND	ND	NT	NT	60	NT	60	ND	NT	NT	50	61	ND	54	ND	62
Oil & Grease	NT	NT	ND	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	ND	NT	NT	NT	NT	NT	NT
TSS	ND	NT	NT	22	67	NT	NT	NT	NT	NT	NT	52	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
*ND - Not Detected																								
*NT - Not Tested																								

5.3 Reliability of Analytical Results

Results were reviewed to determine the reliability of the data and evaluate any limitations on their use in support of project objectives. The data quality indicators were assessed including precision and accuracy. Sample quality control included holding times, surrogate recovery and internal standard results. Batch QC analyses included tuning and calibration, method blanks, laboratory control samples and matrix spikes. The results for each parameter are discussed below.

5.3.1 Sample Receipt

Samples were received at the lab without any noted exceptions.

5.3.2 VOC Analytical Review

All samples for total VOCs were analyzed within method specified holding times. Soils were extracted into methanol and analyzed as mid-level protocols with elevated detection limits (approximately 500 ug/kg). Prior to the analysis of any samples, the tune performance compound BFB was analyzed and an initial calibration (ICAL) was performed. Outlier compounds were evaluated for linearity via linear or non-linear regression. Every 12 hours that samples were analyzed, the instrument tune and calibration was verified. Continuing calibration verifications (CCV) standards were analyzed as required and generally met criteria. The response factor for several compounds in the CCV exceeded the % difference (%D) criteria relative to the ICAL response factor; the response was greater in the CCV and since the compounds were not detected there was no impact on data quality.

Surrogate and internal standards were added to the samples prior to analysis. Area counts and retention times for the internal standards met criteria and surrogate recoveries fell within laboratory control limits.

Method blanks were generally free of target compound contamination; the aqueous method blank contained low level methylene chloride contamination. Aqueous sample results that had reported concentrations less than ten times the blank concentration, after accounting for dilution factors, were qualified as estimated. Accuracy was assessed through the analysis of laboratory control samples (LCSs), which were analyzed with each analytical batch and matrix spikes or matrix spike duplicates (MS/MSD). A few compounds had recoveries that exceeded control limits; these compounds were not detected in the samples.

Results for the field duplicate pair JW-17 and JW-18 indicated that methylene chloride was reported in both samples with a relative percent difference (RPD) of 4.8%; note that these results were both qualified due to blank contamination.

5.3.3 SVOC Analytical Review

All extraction and analysis holding times were met for total SVOCs (aqueous and solid samples). The specified holding time for TCLP extracts is 7 days from the TCLP leachate extraction to the preparative extraction of the leachate for SVOCs. All TCLP leachate samples exceeded this holding time by two to 12 days; the data are qualified as estimated.

Prior to the analysis of any samples, the tune performance compound DFTPP was analyzed and an initial calibration was performed. Outlier calibration compounds were evaluated for linearity

via linear or non-linear regression. Every 12 hours that samples were analyzed, the instrument tune and calibration was verified. The continuing calibration associated with the analysis of soil samples had outlier results when the concentrations of 3-nitroaniline and carbazole were calculated and benzidine had a very low response factor. These compounds required qualification in the samples as estimated (note that 3-nitroaniline and Carbazole are discussed further with spike results below). The continuing calibration associated with the aqueous total SVOC analyses resulted in outlier results for several compounds. Benzyl alcohol had a response factor (RF) of 0 and the result was therefore considered unusable for the aqueous SVOCs. Pyridine, 4-chloroaniline, 2,4-dinitrophenol and pentachlorophenol all had RFs which differed from the initial calibration RF by more than 40% and these results were therefore qualified as estimated (pentachlorophenol was further qualified as a result of spike results) All method blanks were free of target compound contamination.

Surrogates were added to samples prior to extraction and internal standards were added to the extracts prior to analysis. Internal standard area counts and retention time criteria were met for all samples except JW-9. Internal standard area counts for this sample were all approximately twice the expected values, indicating that the extract was most likely inadvertently spiked twice; data for this sample were qualified as estimated. Surrogate recoveries fell outside laboratory control limits for several samples. The SVOC analysis of the TCLP samples JW-4 and JW-14 resulted in recoveries that fell outside laboratory control limits for one or more surrogates; data for these samples were qualified as estimated. Total SVOC analysis of JS-2, JS-3 and JS-5 had surrogate recoveries that were non-compliant; data were qualified as estimated. Samples JW-17 and JW-18 both had recoveries of one or more surrogates that were less than 10% in the total SVOC analysis; since these samples are field duplicates, this confirms that there is matrix interference and the sample results are considered estimated data.

Laboratory control samples (LCS) and matrix spike duplicates were analyzed with each batch of samples to assess accuracy and precision. The soil matrix spike associated with these samples was from a different facility. The results for four compounds in both the LCS and MS/MSD resulted in no recovery: 2-methylphenol, 3-/4-methylphenol (the compounds co-elute), 3-nitroaniline and Carbazole. The data for these compounds are considered unusable in the analysis of the soil samples. The aqueous laboratory control sample and duplicate (LCS/LCSD) had no recovery of pentachlorophenol (PCP); the PCP results are qualified as unusable for the aqueous samples based on these results.

Field duplicate pair JW-17 and JW-18 had all SVOCs (total and TCLP) reported as non-detect in both samples.

5.3.4 Pesticide Analytical Review

Samples for TCLP pesticides were extracted outside of the method specified holding time for the preparative extraction of TCLP leachates. The hold times were exceeded by one to eleven days; therefore all TCLP pesticides data is considered estimated.

Method blanks were free of contamination above the reporting limits. Blank spikes and matrix spike duplicates were analyzed with each batch of samples. A few compound recoveries exceeded control limits in LCS or MS/MSD, however, the compounds were not detected in the samples, and recovery values were generally within 10% of the control limits; therefore there was no impact on overall data quality.

Surrogates were added to the samples prior to extraction. Samples JW-5 and JW-14 had surrogate recoveries that fell outside of the laboratory control limits and the results are considered estimated.

Field duplicate pair JW-17 and JW-18 had all TCLP pesticides reported as non-detect in both samples.

5.3.5 Herbicide Analytical Review

Samples for TCLP herbicides were extracted within method specified holding times. Prior to sample analysis, calibrations were performed per the method requirements.

Calibrations were performed in accordance with method requirements. Method blanks were free of contamination. Laboratory control samples and matrix spike duplicates were analyzed with each batch of samples.

Surrogates were added to each sample prior to extraction. Samples JS-1, JS-2 and JS-3 had surrogate recoveries less than 10% and these data are considered unusable and have been qualified as such.

Field duplicate pair JW-17 and JW-18 had all TCLP herbicides reported as non-detect in both samples.

5.3.6 PCB Analytical Review

Samples for PCB analysis were extracted and analyzed within hold time. Prior to sample analysis, calibrations were performed per the method requirements.

Surrogates were added to samples prior to extraction and most recoveries met specified control limits. Samples JW-5 and JS-5 had surrogate recoveries that fell outside of the control limits and these results are therefore considered estimated values.

Method blanks were free of contamination above the reporting limits. Laboratory control samples (LCS) and matrix spike duplicates were analyzed with each batch of samples. The soil LCS analyses indicated low recovery of Aroclor 1016 (part of the standard spiking solution); the Aroclor 1016 results for the soil samples are qualified as estimated.

Field duplicate pair JW-17 and JW-18 had all PCBs reported as non-detect in both samples.

5.3.7 Metals Analytical Review

Samples were analyzed for Total TAL metals and TCLP metals. All samples were analyzed within method specified holding times.

Calibration was performed as per method requirements and included initial calibration verification standards, continuing calibration verification standards, initial and continuing calibration blanks. Calibration blanks generally met method criteria with several exceptions. Sample concentrations of arsenic in JW-11, JW-12 and JW-14 were suspected of being impacted by the calibration blank concentration and the results are considered estimated. The other metals detected in the calibration blanks (antimony, potassium, calcium and selenium) were either ND in the samples or found at sample concentrations greater than 10 times the blank level. Low level

mercury concentrations in several continuing calibration blanks resulted in the mercury concentration for sample JW-12 being qualified an estimated value.

A method blank associated with the TCLP analyses contained low level concentrations above the reporting limit of barium, cadmium and chromium; any sample result which was less than ten times the blank level was potentially impacted by the blank contamination and was therefore qualified as estimated. A method blank associated with the total metals analysis of aqueous samples contained iron at a concentration which potentially impacted results for JW-8; other samples were either non-detect or had concentrations greater than 10 times the blank value.

Matrix spike duplicates (MS/MSDs) were analyzed with each batch of samples as were laboratory control samples and duplicate samples. Some outlier spike recoveries were due to the high native sample concentration relative to the spiking level which precluded an assessment of accuracy for these metals. Duplicate samples met criteria for precision with RPD values within control limits for samples with results above the RDL.

Field duplicate pair JW-17 and JW-18 had several total metals reported at concentrations above the reporting detection limit. Barium, cadmium, calcium, cobalt, iron, magnesium manganese, potassium and sodium results for the sample pair had a maximum RPD of 12%. The only TCLP metal reported was barium in JW-18, with JW-17 reported as ND; it was noted during the TCLP review that barium results were considered estimated due to blank concentrations that impacted sample results.

5.3.8 Wet Chemistry Review

Ignitability: All samples results were reported as >200°F. A laboratory control sample was reported with results within laboratory limits. The sample and field duplicate both had results reported as >200°F.

Reactive Cyanide: The laboratory control sample and matrix spike associated with these samples were outside laboratory established control limits, data are considered to be estimated values. The sample and field duplicate were both reported as ND.

Reactive Sulfide: All samples were run outside of holding time; therefore all results are qualified as estimated. The laboratory control sample and matrix spike associated with these samples were outside laboratory established control limits, data are considered to be estimated values. The sample and field duplicate were both reported as ND.

pH: The pH of the aqueous samples was determined outside of holding time; therefore all results are qualified as estimated. Samples JW-17 had a pH of 7.6 and the field duplicate pH was 7.3.

5.4 Summary of Data Usability and Limitations

Based on the review of analytical data, as detailed above, some sample results have been identified as having QC non-conformance such that the data cannot be used without qualification. Several results were considered unusable; the results for these samples were qualified with a Data Validation Qualifier (DVQ) of R. Other data that were considered to be estimated results were qualified with a DVQ of J or UJ, and have been so indicated in the attached JM Stuart Data Review Tables.

All other sample data can be used without additional limitation or qualification for the evaluation of project objectives.

6.0 Regulatory Review

6.1 RCRA

Mr. Beedle, EPA Region 5, took the lead for the RCRA inspection and is preparing a separate report. Ms. Steed and Mr. Whittum of SAIC provided input in the field to Mr. Beedle based on observations during the inspection.

6.2 EPCRA

6.2.1 Tier I and II

Subpart B Community Right-To-Know reporting requirements apply to any facility that is required to prepare or have available a material safety data sheet (MSDS) for a hazardous chemical under the *Occupational Safety and Health Act of 1970* and regulations promulgated under that Act. The minimum threshold for reporting for extremely hazardous substances is 500 pounds (lbs) (or 227 kilograms (kgs)--approximately 55 gallons) or the threshold planning quantity (TPQ), whichever is lower. The minimum threshold for reporting for all other hazardous chemicals is 10,000 lbs (or 4,540 kgs) (40 CFR §370.20).

40 CFR §370.25 requires the owner or operator of a facility subject to Subpart B to submit an inventory form to the State Emergency Response Commission (SERC), the Local Emergency Planning Committee (LEPC), and the fire department with jurisdiction over the facility. The inventory form containing Tier I information on hazardous chemicals present at the facility during the preceding calendar year above the threshold levels stated above must be submitted on or before March 1 of each year. The facility may submit a Tier II form in lieu of the Tier I information.

SAIC performed the following reviews for the calendar-year 2007 and 2008 Tier II forms for the JM Stuart Power Plant:

- 1) Confirmed that the reports had been submitted by 1 March 2008 (calendar year 2007) and 2009 (calendar year 2008) to the SERC, LEPC and fire department with jurisdiction over the facility (Manchester Fire Department).
- 2) Determined that the North American Industry Classification System (NAICS) Code was missing from the calendar year 2008 Tier II form. 40 CFR §370.41 requires the form contain the NAICS Code, as in effect on 1 January 2007, for reporting year 2008 and thereafter (formerly the Standard Industrial Classification (SIC) Code). No NAICS Code is present on the calendar year 2008 Tier II form.
- 3) Spot checked quantities of chemical stored in various locations throughout the two facilities to identify any chemicals currently stored in excess of the respective reportable quantity, recognizing that current quantities are not reportable until next March. The intent was to identify chemicals currently in excess of reportable quantities (RQs) and attempt to determine if RQs were exceeded in 2007 and 2008. Typically the assessor would a) compare inventory documents for previous years to the Tier II forms to confirm all chemicals above RQ were reported and b) compare current inventory documents to current physical inventories to confirm the accuracy of

the inventory system. However, JM Stuart personnel could not produce current or past document inventories for chemicals stored. The Environmental, Safety, and Health Manager stated that chemical inventories are not maintained; chemicals are ordered on an as needed basis. Limited time prevented a comprehensive review of purchasing and usage records (it is not clear that usage is documented) in lieu of chemical inventory records. Therefore, a comparison of current physical inventories to current document inventories and a cross-check of previous calendar year document inventories to Tier II reports could not be made. SAIC's assessor did observe a 10,000-gallon underground storage tank (UST) and a 1,000-gallon UST containing used oil. The ES&H Manager indicated both USTs have been on site since 2007. Using a density of 7.34 lb/gal for motor oil and the TPQ of 10,000 lbs, the approximate quantity requiring the facility to reporting for used oil is 1,300 gallons. Per the Environmental Engineer, the USTs contained more than 1,300 gallons during 2007 and 2008.

4) To the extent that time constraints and the availability of JM Stuart personnel and documentation permitted, storage capacity of tanks was confirmed and these were compared to Tier II reported quantities. Other than reporting for used oil, no discrepancies were noted.

6.2.2 Section 302 Notification

A facility with quantities of extremely hazardous substances equal to or greater than the limits found in 40 CFR §355, Appendix A is required to notify the SERC within 60 days that the facility is subject to emergency planning requirements. The facility must designate a representative to participate in local emergency planning as a facility emergency response coordinator. The facility must also submit additional information to the local emergency planning committee upon request and notify them of any changes at the facility which might be relevant to emergency planning (i.e., designation of the emergency response coordinator, material changes in inventory).

SAIC determined, based on the Tier II reports and a review of the facility's inventory, that JM Stuart maintains an extremely hazardous substance in quantities greater than the limits found in 40 CFR §355, Appendix A for ammonia. According to the ES&H Manager, the ammonia was brought on site in 2003/2004. Around that same time, the facility conducted a tabletop exercise with the SERC, LEPC, and Manchester Fire Department regarding the ammonia. The ES&H Manager believes that an emergency response coordinator was designated in accordance with 40 CFR §355, but he maintains no documentation.

6.2.3 Toxics Release Inventory (TRI)

The ES&H Manager at JM Stuart confirms that the plant is a covered facility as defined in 40 CFR §372.22 and is required to implement Toxic Chemical Release Reporting, commonly known as TRI, because it has more than 10 employees and is in a covered Standard Industrial Code (SIC).

40 CFR §372.25(b) requires TRI reporting by facilities that manufacture or process 25,000 pounds of a chemical for the year and "otherwise use" at a facility 10,000 pounds of the chemical for the applicable calendar year. Manufacture means to produce, prepare, import, or compound a toxic chemical. Manufacture also applies to a toxic chemical that is produced coincidentally during the manufacture, processing, use, or disposal of another chemical or mixture of chemicals, including a toxic chemical that is separated from that other chemical or mixture of chemicals as a byproduct, and a toxic chemical that remains in that other chemical or mixture of chemicals as an impurity. Otherwise use means any use of a toxic chemical, including a toxic chemical contained in a mixture or other trade name product or waste, that is not covered by the terms "manufacture"

or "process." Otherwise use of a toxic chemical does not include disposal, stabilization (without subsequent distribution in commerce), or treatment for destruction. Process means the preparation of a toxic chemical, after its manufacture, for distribution in commerce.

SAIC reviewed spreadsheets provided by the ES&H Manager and spot checked the accuracy of calculations. The review indicates that TRI data are properly calculated and chemicals are properly reported.

6.3 CWA

Figure 6-1 presents a schematic of water flow at the J.M. Stuart Station. Water is drawn from the Ohio River with the majority used for once-through condenser cooling. Condenser cooling water from Units 1, 2, and 3 is discharged via a discharge tunnel to Outfalls 001 and 002. These two outfalls discharge into Little Three Mile Creek. A small percentage of the river water is used for sluicing and transporting fly ash to the fly ash pond. After pH adjustment, the fly ash pond water discharges back into the Ohio River via Outfall 013. An even smaller percentage of the river water entering the plant, along with a small amount of Unit 4 cooling tower water, is used to sluice and transport bottom ash to the bottom ash pond. In addition, the bottom ash pond also receives wastewater from cooling tower blowdown as well as equipment and floor drains. All of the wastewater from the bottom ash pond is treated through a filtration system and then discharged into Little Three Mile Creek via Outfall 012. Outfall 609 is the sanitary treatment system discharge point. The fly ash disposal & landfill run-off discharges via Outfall 019, while a small percentage of this flow is diverted to an on-site wetland. The on-site wetland discharges into Buzzard's Roost Creek via Outfall 020.

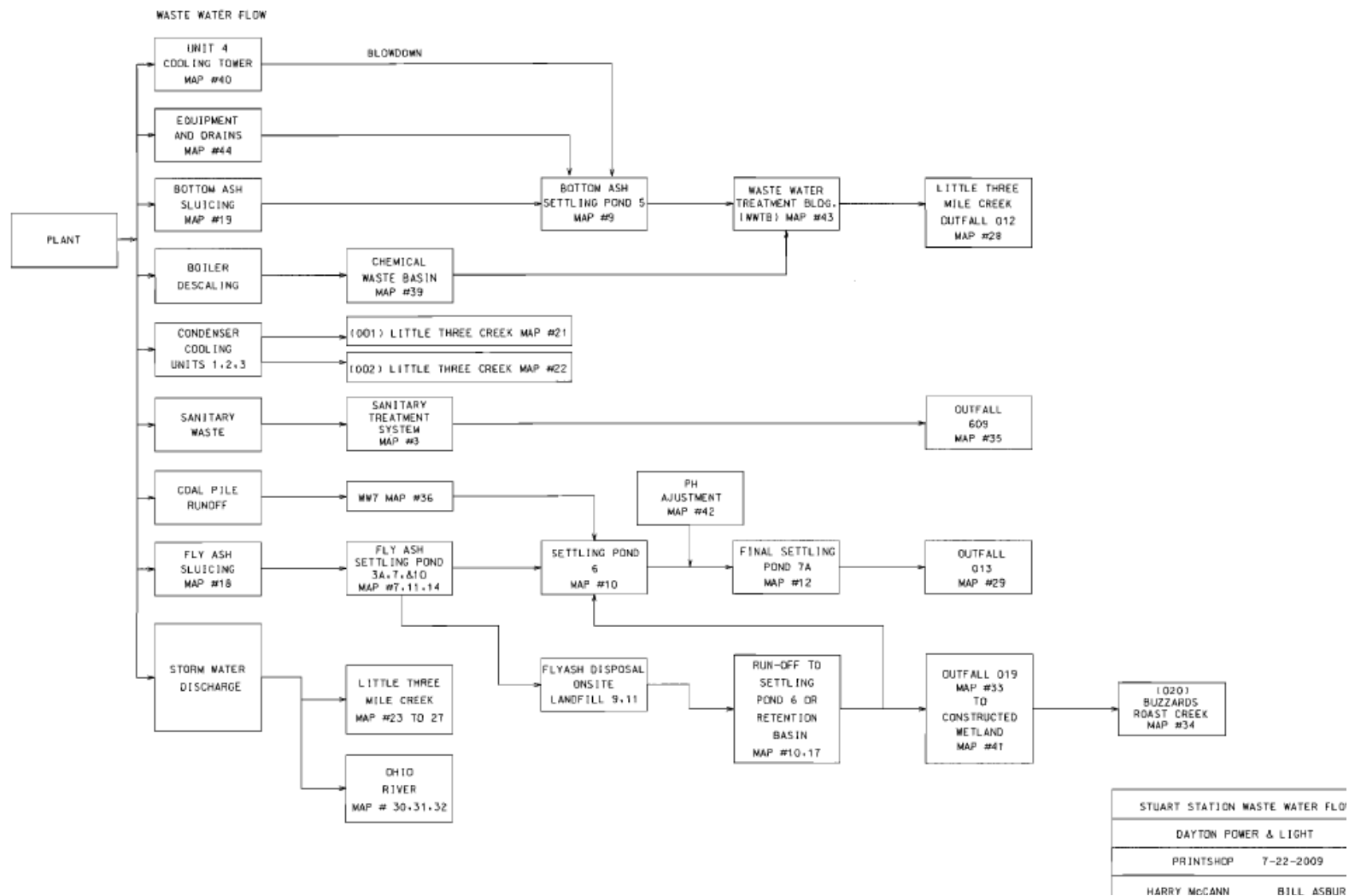


Figure 6-1 Schematic Water Flow Diagram

6.3.1 Spill Prevention, Control, and Countermeasure (SPCC) Plan and Facility Response Plan (FRP) Review

40 CFR §112, the Oil Pollution Prevention regulation, which is promulgated under the authority of §311 of the Clean Water Act (CWA), sets forth requirements for prevention of, preparedness for, and response to oil discharges at specific non-transportation-related facilities. To prevent oil from reaching navigable waters and adjoining shorelines and to contain discharges of oil, this regulation requires these facilities to develop and implement a Spill Prevention, Control, and Countermeasure (SPCC) Plan and establish procedures, methods, and equipment requirements. Any facility storing over 1,320 gallons of petroleum, oil, or lubricant (POL) in containers of 55 gallons or greater must prepare and implement an SPCC Plan (Plan). JM Stuart Generating Station stores over 1,320 gallons of POL and is subject to 40 CFR §112 requirements.

Additionally, Subpart D of 40 CFR §112 requires that an owner or operator of a non-transportation-related onshore facilities that, because of location, could reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shoreline develop a Facility Response Plan (FRP). Facilities required to prepare and implement a FRP include facilities that either transfer oil to or from vessels and has a total oil storage capacity greater than or equal to 42,000 gallons or maintains a total oil storage capacity greater than 1 million gallons of POL and meets a second criteria. The JM Stuart Generating Station neither transfers oil to or from vessels nor maintains a total oil storage capacity greater than 1 million gallons of POL.

SAIC performed the following reviews for the JM Stuart Generating Station.

1) SAIC confirmed that a Plan had been prepared for the facility and a completed copy was maintained on site. The entire Plan was last revised in June 2005.

2) SAIC verified that the JM Stuart management certified within the last year that they did not qualify for or need to prepare and implement a FRP based on substantial harm criteria.

3) SAIC verified that the Plan is reviewed and evaluated at least once every 5 years, certified by a registered professional engineer, and has management approval. The Plan includes a physical layout of the facility, flow drainage diagrams, and other required information. Four potential issues were noted:

- Portions of the Plan provide general rather than specific detail (e.g., the 250,000 gallon fuel oil tank and containment is described in specific detail, but for many other tanks the Plan generally notes that the tanks have adequate secondary containment that for some is the holding pond).
- The facility map/drawing does not include the petroleum, oil, and lubricant piping.
- The facility has not provided secondary containment for all oil-filled equipment.
- The Plan states that providing containment for oil-filled equipment (e.g., transformers, equipment gear boxes, and reservoirs) is practicable, but the facility has not either provided secondary containment for all oil-filled electrical equipment or documented in the Plan the reason for the impracticability of providing secondary containment for such equipment.

4) SAIC spot checked training records and reviewed training presentation given to oil-handling and other pertinent personnel at the facility. Two potential issues were noted:

- The individual listed in the Plan as the person responsible for the Plan has not attended the SPCC training.
- Oil-handling contractors working on site for more than six months do not receive annual SPCC training.

5) SAIC reviewed written procedures and spot checked records of inspections and tests relevant to the SPCC Plan. Two potential issues were noted:

- The Plan does not provide the specifics of the differences between the monthly, quarterly, and annual inspections (e.g., monthly versus annual) and inspection variations (e.g., tank versus a drum).
- The Plan lacks specifics regarding evaluation and testing and simply states that the outside of the tanks are observed on a regular basis for deterioration or leakage and that field constructed above ground containers must be inspected.

6) JM Stuart conducts a combined SPCC and storm water inspection, but the SPCC annual inspection report contains very limited detail.

6.3.2 Storm Water Pollution Prevention Plan (SWPPP) and National Pollutant Discharge Elimination System (NPDES) Review

Ohio is an authorized state under the federal permitting program. The Ohio Environmental Protection Agency (OEPA) administers the federal program as the National Pollutant Discharge Elimination System (NPDES) permit program. The Ohio NPDES Permit Regulation sets forth the policies and procedures that are followed in the administration of the permit program. As mandated by the Clean Water Act and EPA's Phase 1 (11/16/90) and Phase 2 (12/8/99) storm water regulations, OEPA issues combination NPDES permits that regulate storm water discharges from "Industrial Activities" as well as the discharge of industrial and sanitary waste. Under the Phase 1 storm water regulations, storm water discharges from "industrial activities" are regulated by OEPA.

JM Stuart Generating Station (facility) is considered a steam electric power generating station that discharges storm water associated with industrial activity through point sources. Therefore, the facility has a NPDES permit that includes storm water requirements. Furthermore, a Storm Water Pollution Prevention Plan (SWPPP) is required for the facility.

1) SAIC confirmed that a SWPPP had been prepared for the facility and a completed copy was maintained on site. The entire plan was last prepared on December 17, 2008.

2) SAIC verified that the SWPPP identifies the facility's storm water pollution prevention team. The SWPPP contains most required items and describes areas where industrial materials or activities are exposed to storm water and the potential pollutants resulting from a storm water discharge. Three potential issues were noted:

- The SWPPP contains area and vicinity maps, but does not contain a map that identifies the general direction of storm water flows for the various general areas of the site.
- The SWPPP does not discuss storm water in the area of Landfill No. 9 or the area east of Buzzards Roost Creek.

- The SWPPP does not discuss storm water run off from the facility and contractor vehicle maintenance areas.

3) The most recent annual compliance evaluation was completed on December 31, 2008. The facility conducts a combined storm water and Spill Prevention, Control, and Countermeasure (SPCC) inspection, but the storm water inspection reports contain very limited detail.

4) SAIC spot checked training records and reviewed the SWPPP PowerPoint presentation training given to pertinent staff. The facility has developed SWPPP training, provides training to staff, and maintains training records.

5) SAIC noted the facility had a constructed wetland that discharges at Outfall 020. The wetland was built to replace wetlands disturbed on site and was to act as a storm water polishing system. The wetland was to replace a low quality wetland with a higher quality, vegetated wetland, but appeared to be a pond that did not contain vegetation and potentially was not acting as a higher quality wetland. Figures 6.3.2-1 and 6.3.2-2 show the wetland.



Figure 6.3.2-1. View of wetland from the north.



Figure 6.3.2-2. View of wetland from sampling point at west end of pond.

The NPDES portion of the inspection was primarily conducted by Mark Conti, Environmental Engineer, out of the EPA Cleveland, Ohio office. Therefore, Mr. Conti will provide a separate report for his findings and observations. SAIC also provided assistance to portions of the inspection. The J.M. Stuart outfalls are regulated under NPDES Permit #01B00049*MD issued September 1, 2005.

1) SAIC performed a Discharge Monitoring Report spot check on all of the outfalls permitted under NPDES and storm water from June 2008 – June 2009. The following exceedances were observed during the June 2008 – June 2009 time period:

- Daily maximum Total Residual Oxygen and Total Residual Chlorine exceedances for Outfall 002 in June 2008;
- Daily maximum Total Residual Oxygen and Total Residual Chlorine exceedances for Outfall 002 in August 2008;
- Monthly Total Suspended Solids exceedance for Outfall 019 in March 2009;
- Monthly Total Suspended Solids exceedance for Outfall 019 in August 2008;
- Daily maximum and monthly Dissolved Hexavalent Chromium exceedances for Outfall 013 in July 2008;
- Daily maximum Oil and Grease exceedance for Outfall 013 in July 2008;
- Daily maximum Oil and Grease exceedance and daily Dissolved Hexavalent Chromium exceedance for Outfall 013 in September 2008;
- Daily maximum Dissolved Hexavalent Chromium exceedance for Outfall 013 in November 2008;
- Daily maximum and monthly Oil and Grease exceedance for Outfall 013 in December 2008.

2) SAIC observed a potential issue of a discharge of water and possibly coal fines to the Ohio River. Water used to flush the coal conveyor from the river barge was observed transporting coal fines to the storm water Outfall 16 containment. The containment was observed to have a non-permitted discharge to the Ohio River at the coal unloading area. Outfall 016 was not discharging during the inspection. Potentially, coal fines have been discharged to the Ohio River with the coal conveyor water and Outfall 016 storm water. SAIC collected water and sediment samples of the Ohio River where the coal fines appeared to be discharged. It appears that the non-permitted discharge has been an ongoing. The first and second quarter 2009 storm water inspection reports noted that “coal spillage from #2 conveyor continues. Weekly cleanup has been instituted and modifications / replacement for the system are being evaluated.” Figures 6.3.2-3 through 6.3.2-6 show the discharge to the Ohio River.

3) Talking with Mr. Conti about some of the NPDES concerns, it was observed in the DMR spot check that there were exceedances of Dissolved Hexavalent Chromium for one of the outfalls. After asking the representatives about these particular exceedances, it was determined that the formula used to obtain the appropriate Dissolved Hexavalent Chromium value was being calculated wrong. The facility stated that they are taking the correct steps to improve and correct the issue.

4) During the closing conference, Mr. Conti stated that there may be an unpermitted discharge ongoing at the South Forebay. This may be a potential issue because although the facility did submit a timely permit application that included the outfall, the permit hasn't been finalized.



Figure 6.3.2-3. Conveyor wash water (photo left) and coal fines (photo center) drop to the sloped concrete pad beneath the conveyor.



Figure 6.3.2-4. Coal fines wash to the containment at the bottom of the pad. The containment discharges to the Ohio River at the left of the column (photo center). Note a barge on the Ohio River (photo top).



Figure 6.3.2-5. Conveyor wash water runoff and coal fines are discharged to the Ohio River (photo left) through a metal containment wall (photo center).



Figure 6.3.2-6. Discharge through the metal containment wall (photo right) is to the Ohio River (photo center and left).

7.0 References

¹SAIC. 2009. *Quality Assurance Project Plan for Power Plant Waste Management Compliance Investigations*. Science Applications International Corporation. June 2009.

APPENDIX A

GOOGLE EARTH PHOTOGRAPHS



Overview of JM Generating Station



JM Stuart Generating Station Central Area





APPENDIX B

CHAIN OF CUSTODY FORMS

		Baltimore Division Baltimore, MD 21224 Tel: 410-633-1800 Fax: 410-633-6553 www.microbac.com		Sample Submittal Chain of Custody Record		Work Order Number: _____											
		Page <u>1</u> of <u>1</u>															
Client Name <u>SAIC</u>		Project <u>EPA (CW)</u>		Turnaround Time (Required)		QC and EDD Type (Required)											
Address <u>12100 Sunset Hills Road</u>		Location <u>Manchester, OH</u>		<input checked="" type="checkbox"/> Standard		<input type="checkbox"/> Level I (NAC)											
City, State, Zip <u>Reston, VA 20190</u>		PO # _____		<input type="checkbox"/> RUSH* (notify lab)		<input type="checkbox"/> Level II **											
Contact <u>Brandon Peebles</u>		Compliance Monitoring? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		_____ (needed by)		<input checked="" type="checkbox"/> Level III **											
Telephone # <u>703-375-2264</u>		(1) Agency/Program <u>EPA</u>				<input type="checkbox"/> Level IV **											
Sampled by (PRINT) <u>Brandon Peebles</u>		Sampler Signature <u>[Signature]</u>		Sampler Phone # <u>703-375-2264</u>		Format: <u>Excel</u>											
Send Report via <input checked="" type="checkbox"/> e-mail (address) <u>peeblesb@saic.com</u>		<input checked="" type="checkbox"/> Mail <input type="checkbox"/> Telephone <input type="checkbox"/> Fax (fax #) _____		Comments: _____													
* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify) _____																	
Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analysis							Comments		
								TSS	Total Metals	TCLP	SWC/PcB	Volatiles	Ignit., React., PH				
JW-1	WW	<input checked="" type="checkbox"/>			8/5/09	10:20	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>								
JW-2	WW	<input checked="" type="checkbox"/>			8/5/09	11:12	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>								
JS-1	S		<input checked="" type="checkbox"/>		8/5/09	11:20	6		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					* Six containers for soil, full suite
Possible Hazard Identification		<input type="checkbox"/> Hazardous <input checked="" type="checkbox"/> Non-Hazardous <input type="checkbox"/> Radioactive		Sample Disposition		<input checked="" type="checkbox"/> Dispose as appropriate <input type="checkbox"/> Return <input type="checkbox"/> Archive											
Number of Containers: _____		Relinquished By (signature) <u>[Signature]</u>		Printed Name/Affiliation <u>Brandon Peebles</u>		Date/Time <u>8/5/09 16:37</u>		Received By (signature) _____		Printed Name/Affiliation _____							
Cooler Number: _____		Relinquished By (signature) _____		Printed Name/Affiliation _____		Date/Time _____		Received By (signature) _____		Printed Name/Affiliation _____							
Temp upon receipt(°C): _____		Relinquished By (signature) _____		Printed Name/Affiliation _____		Date/Time _____		Received for Lab By (signature) _____		Printed Name/Affiliation _____							
Sample Received on Ice or Refrigerated from Client: Yes / No																	

		Baltimore Division Baltimore, MD 21224 Tel: 410-633-1800 Fax: 410-633-6553 www.microbac.com		Sample Submittal Chain of Custody Record		Work Order Number: _____				
		Page <u>1</u> of <u>1</u>								
Client Name <u>SAIC</u>		Project <u>EPA CCW</u>		Turnaround Time (Required)		QC and EDD Type (Required)				
Address <u>12100 Sunset Hills Road</u>		Location <u>Norfolk, OH</u>		<input checked="" type="checkbox"/> Standard		<input type="checkbox"/> Level I (NAC)				
City, State, Zip <u>Reston, VA 20190</u>		PO # _____		<input type="checkbox"/> RUSH* (notify lab)		<input type="checkbox"/> Level II **				
Contact <u>Brandon Peebles</u>		Compliance Monitoring? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		_____ (needed by)		<input checked="" type="checkbox"/> Level III **				
Telephone # <u>703-375-2264</u>		(1) Agency/Program <u>EPA</u>				<input type="checkbox"/> Level IV **				
Sampled by (PRINT) <u>Brandon Peebles</u>		Sampler Signature <u>[Signature]</u>		Sampler Phone # <u>703-375-2264</u>		Format: <u>Excel</u>				
Send Report via <input checked="" type="checkbox"/> e-mail (address) <u>peeblesb@saic.com</u>		<input type="checkbox"/> Mail <input type="checkbox"/> Telephone <input type="checkbox"/> Fax (fax #) _____		Comments: _____						
* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify) _____										
Client Sample ID		Requested Analysis								
		Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	<u>TCLP</u> <u>SVOC/PCB</u> <u>Volatiles</u> <u>Ignit, React, pH</u>	Comments
JS-2		S		<input checked="" type="checkbox"/>		8/5/09	15:07	6	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
Possible Hazard Identification		<input type="checkbox"/> Hazardous <input checked="" type="checkbox"/> Non-Hazardous <input type="checkbox"/> Radioactive		Sample Disposition		<input checked="" type="checkbox"/> Dispose as appropriate <input type="checkbox"/> Return <input type="checkbox"/> Archive				
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Cooler Number: _____		Relinquished By (signature) _____		Printed Name/Affiliation _____		Received By (signature) _____				
Temp upon receipt(°C): _____		Relinquished By (signature) _____		Printed Name/Affiliation _____		Received By (signature) _____				
Sample Received on Ice or Refrigerated from Client: Yes / No		Relinquished By (signature) _____		Printed Name/Affiliation _____		Received for Lab By (signature) _____				
						Printed Name/Affiliation _____				

** Surrogate May Analyze to add QC Packages **

DATA 1 2

		Baltimore Division Baltimore, MD 21224 Tel: 410-633-1800 Fax: 410-633-6553 www.microbac.com		Sample Submittal Chain of Custody Record		Work Order Number: _____											
		Page <u>1</u> of <u>1</u>															
Client Name <u>SAIC</u>		Project <u>EPA CCW</u>		Turnaround Time (Required)		QC and EDD Type (Required)											
Address <u>12100 Sunset Hills Rd</u>		Location <u>Manchester, OH</u>		<input checked="" type="checkbox"/> Standard		<input type="checkbox"/> Level I (NAC)											
City, State, Zip <u>Reston, VA 20190</u>		PO # _____		<input type="checkbox"/> RUSH* (notify lab)		<input type="checkbox"/> Level II **											
Contact <u>Brandon Peebles</u>		Compliance Monitoring? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(needed by) _____		<input checked="" type="checkbox"/> Level III **											
Telephone # <u>763-375-2264</u>		(1) Agency/Program <u>EPA</u>				<input type="checkbox"/> Level IV **											
Sampled by (PRINT) <u>Brandon Peebles</u>		Sampler Signature <u>[Signature]</u>		Sampler Phone # <u>763-375-2264</u>		Format: <u>Excel</u>											
Send Report via <input checked="" type="checkbox"/> e-mail (address) <u>peeblesb@saic.com</u>		<input checked="" type="checkbox"/> Mail <input type="checkbox"/> Telephone <input type="checkbox"/> Fax (fax #) _____		Comments: _____													
* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify) _____																	
Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analysis							Comments		
								TCLP	Volatiles	SWC/PCBs	Metals	Radioactivity pH	Ignitability				
JW-4	WW	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8/6/09	8:10	12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	* All samples collected 8/6/09
Possible Hazard Identification <input type="checkbox"/> Hazardous <input checked="" type="checkbox"/> Non-Hazardous <input type="checkbox"/> Radioactive		Sample Disposition <input checked="" type="checkbox"/> Dispose as appropriate <input type="checkbox"/> Return <input type="checkbox"/> Archive															
Number of Containers: _____		Relinquished By (signature) <u>[Signature]</u>		Printed Name/Affiliation <u>Brandon Peebles</u>		Date/Time <u>8/6/09 16:58</u>		Received By (signature) _____		Printed Name/Affiliation _____							
Cooler Number: _____		Relinquished By (signature) _____		Printed Name/Affiliation _____		Date/Time _____		Received By (signature) _____		Printed Name/Affiliation _____							
Temp upon receipt(°C): _____		Relinquished By (signature) _____		Printed Name/Affiliation _____		Date/Time _____		Received for Lab By (signature) _____		Printed Name/Affiliation _____							
Sample Received on Ice or Refrigerated from Client: Yes / No																	

** Customer May Ask to add QC Package **

NEW LAB

YELLOW REPORT

SAIC CLIENT REPORT

		Baltimore Division Baltimore, MD 21224 Tel: 410-633-1800 Fax: 410-633-6553 www.microbac.com		Sample Submittal Chain of Custody Record		Work Order Number: _____												
		Page <u>1</u> of <u>1</u>																
Client Name <u>SAIC</u>		Project <u>EPA (CW)</u>		Turnaround Time (Required)		QC and EDD Type (Required)												
Address <u>12100 Sunset Hills Rd</u>		Location <u>Manchester, OH</u>		<input checked="" type="checkbox"/> Standard		<input type="checkbox"/> Level I (NAC)												
City, State, Zip <u>Reston, VA 20190</u>		PO # _____		<input type="checkbox"/> RUSH* (notify lab)		<input type="checkbox"/> Level II **												
Contact <u>Brandon Peebles</u>		Compliance Monitoring? <input type="checkbox"/> Yes <input type="checkbox"/> No		_____ (needed by)		<input checked="" type="checkbox"/> Level III **												
Telephone # <u>703-375-2264</u>		(1) Agency/Program				<input type="checkbox"/> Level IV **												
Sampled by (PRINT) <u>Brandon Peebles</u>		Sampler Signature <u>[Signature]</u>		Sampler Phone # <u>703 375-2264</u>														
Send Report via <input checked="" type="checkbox"/> e-mail (address) <u>peeblesb@saic.com</u>		<input checked="" type="checkbox"/> Mail <input type="checkbox"/> Telephone <input type="checkbox"/> Fax (fax #) _____																
* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify) _____																		
Client Sample ID		Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analysis								Comments	
									ICLP	Volatiles	SWR/PBS	Metals	Toxicity	Reactivity, pH				
JS-3		S		<input checked="" type="checkbox"/>		8/6/09	8:34	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	* All samples collected
JW-5		WW		<input checked="" type="checkbox"/>		8/6/09	9:21	12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	8/6/09
Possible Hazard Identification		<input type="checkbox"/> Hazardous <input checked="" type="checkbox"/> Non-Hazardous		<input type="checkbox"/> Radioactive		Sample Disposition		<input checked="" type="checkbox"/> Dispose as appropriate		<input type="checkbox"/> Return		<input type="checkbox"/> Archive						
Number of Containers:		Relinquished By (signature) <u>[Signature]</u>		Printed Name/Affiliation <u>Brandon Peebles</u>		Date/Time <u>8/6/09 16:41</u>		Received By (signature) _____		Printed Name/Affiliation _____								
Cooler Number:		Relinquished By (signature) _____		Printed Name/Affiliation _____		Date/Time _____		Received By (signature) _____		Printed Name/Affiliation _____								
Temp upon receipt(°C):		Relinquished By (signature) _____		Printed Name/Affiliation _____		Date/Time _____		Received By (signature) _____		Printed Name/Affiliation _____								
Sample Received on ice or Refrigerated from Client: Yes / No		Relinquished By (signature) _____		Printed Name/Affiliation _____		Date/Time _____		Received for Lab By (signature) _____		Printed Name/Affiliation _____								

		Baltimore Division Baltimore, MD 21224 Tel: 410-633-1800 Fax: 410-633-6553 www.microbac.com		Sample Submittal Chain of Custody Record		Work Order Number: 09H0207											
		Page <u>1</u> of <u>1</u>															
Client Name <u>SAIC</u>		Project <u>EPA-CCW</u>		Turnaround Time (Required)		QC and EDD Type (Required)											
Address <u>16100 Sunset Hills Rd</u>		Location <u>Manchester, OH</u>		<input checked="" type="checkbox"/> Standard		<input type="checkbox"/> Level I (NAC)											
City, State, Zip <u>Reston, VA 20190</u>		PO #		<input type="checkbox"/> RUSH* (notify lab)		<input type="checkbox"/> Level II **											
Contact <u>Brandon Peebles</u>		Compliance Monitoring? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(needed by)		<input checked="" type="checkbox"/> Level III **											
Telephone # <u>703-375-2264</u>		(1) Agency/Program <u>EPA</u>				<input type="checkbox"/> Level IV **											
Sampled by (PRINT) <u>Brandon Peebles</u>		Sampler Signature <u>[Signature]</u>		Sampler Phone # <u>703-375-2264</u>		Format: <u>Excel</u>											
Send Report via <input checked="" type="checkbox"/> e-mail (address) <u>peeblesb@saic.com</u>		<input type="checkbox"/> Mail <input type="checkbox"/> Telephone <input type="checkbox"/> Fax (fax #)															
<small>* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)</small>																	
Client Sample ID		Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analysis							Comments	
									TCLP	Volatiles	SWC/PCBs	Metals	Ignitability	Reactivity	pH		
JW-8		WW	<input checked="" type="checkbox"/>			8/6/09	11:24	12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			# All samples collected 8/6/09
Possible Hazard Identification		<input type="checkbox"/> Hazardous <input checked="" type="checkbox"/> Non-Hazardous		<input type="checkbox"/> Radioactive		Sample Disposition			<input checked="" type="checkbox"/> Dispose as appropriate <input type="checkbox"/> Return <input type="checkbox"/> Archive								
Number of Containers: <u>3</u>		Relinquished By (signature) <u>[Signature]</u>		Printed Name/Affiliation <u>Brandon Peebles</u>		Date/Time <u>8/6/09 17:05</u>		Received By (signature) <u>BMC via FedEx</u>		Printed Name/Affiliation <u>8/10/09 1000 MCI</u>							
Cooler Number: <u>3</u>		Relinquished By (signature)		Printed Name/Affiliation		Date/Time		Received By (signature)		Printed Name/Affiliation							
Temp upon receipt(°C): <u>6.3</u>		Relinquished By (signature)		Printed Name/Affiliation		Date/Time		Received for Lab By (signature)		Printed Name/Affiliation							
Sample Received on Ice or Refrigerated from Client <input checked="" type="radio"/> Yes <input type="radio"/> No																	

		Baltimore Division Baltimore, MD 21224 Tel: 410-633-1800 Fax: 410-633-6553 www.microbac.com		Sample Submittal Chain of Custody Record		Work Order Number: _____											
		Page <u>1</u> of <u>1</u>															
Client Name <u>SAIC</u>		Project <u>EPA CFW</u>		Turnaround Time (Required)		QC and EDD Type (Required)											
Address <u>12100 Sunset Hills Rd</u>		Location <u>Manchester, OH</u>		<input checked="" type="checkbox"/> Standard		<input type="checkbox"/> Level I (NAC)											
City, State, Zip <u>Reston, VA 20190</u>		PO # _____		<input type="checkbox"/> RUSH* (notify lab)		<input type="checkbox"/> Level II **											
Contact <u>Brandon Peebles</u>		Compliance Monitoring? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(needed by) _____		<input checked="" type="checkbox"/> Level III **											
Telephone # <u>703-375-2264</u>		(1) Agency/Program <u>EPA</u>				<input type="checkbox"/> Level IV **											
Sampled by (PRINT) <u>Brandon Peebles</u>		Sampler Signature <u>[Signature]</u>		Sampler Phone # <u>703-375-2264</u>		Format: <u>Excel</u>											
Send Report via <u>E-mail (address)</u> <u>peeblesb@saic.com</u>		<input checked="" type="checkbox"/> Mail <input type="checkbox"/> Telephone <input type="checkbox"/> Fax (fax #) _____		Comments: _____													
* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify) _____																	
Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analysis								Comments	
								TCLP	Volatile Org	SVOC / PCBs	Metals	Topical Oil / Fuel	Residual Oil / Fuel	pH	Oil & Grease		
JIS-5	S		<input checked="" type="checkbox"/>		8/6/09	15:10	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				* All samples collected 8/6/09
JW-9	WW	<input checked="" type="checkbox"/>			8/6/09	11:48	12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
JW-11	WW	<input checked="" type="checkbox"/>			8/6/09	14:35	3			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Possible Hazard Identification <input type="checkbox"/> Hazardous <input checked="" type="checkbox"/> Non-Hazardous <input type="checkbox"/> Radioactive								Sample Disposition <input checked="" type="checkbox"/> Dispose as appropriate <input type="checkbox"/> Return <input type="checkbox"/> Archive									
Number of Containers: _____		Relinquished By (signature) <u>[Signature]</u>		Printed Name/Affiliation <u>Brandon Peebles</u>		Date/Time <u>8/6/09 17:35</u>		Received By (signature) _____		Printed Name/Affiliation _____							
Cooler Number: _____		Relinquished By (signature) _____		Printed Name/Affiliation _____		Date/Time _____		Received By (signature) _____		Printed Name/Affiliation _____							
Temp upon receipt(°C): _____		Relinquished By (signature) _____		Printed Name/Affiliation _____		Date/Time _____		Received for Lab By (signature) _____		Printed Name/Affiliation _____							
Sample Received on Ice or Refrigerated from Client: Yes / No		Relinquished By (signature) _____		Printed Name/Affiliation _____		Date/Time _____		Received for Lab By (signature) _____		Printed Name/Affiliation _____							

1 01/01/04 17/01/04 17/01/04 17/01/04 17/01/04 17/01/04 17/01/04 17/01/04 17/01/04 17/01/04

Microbac **Baltimore Division** **Sample Submittal** **Work Order Number:**
 Baltimore, MD 21224 **Chain of Custody Record**
 Tel: 410-633-1800
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Page 1 of 1

Client Name SAIC	Project EPA COW	Turnaround Time (Required)	QC and EDD Type (Required)
Address 12100 Sunset Hills Rd	Location Manchester, OH	<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Level I (NAC) <input checked="" type="checkbox"/> EDD
City, State, Zip Reston, VA 20190	PO #	<input type="checkbox"/> RUSH* (notify lab)	<input type="checkbox"/> Level II ** <input type="checkbox"/> Level III ** <input type="checkbox"/> Level IV **
Contact Brandon Peebles	Compliance Monitoring? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	(needed by)	Format: Excel
Telephone # 703-375-2264	(1) Agency/Program EPA		Comments:

Sampled by (PRINT) Brandon Peebles **Sampler Signature** *Brandon Peebles* **Sampler Phone #** 703-375-2264

Send Report via ☒ e-mail (address) peeblesb@saic.com ☐ Mail ☐ Telephone ☐ Fax (fax #)

* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)

Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analysis										Comments
JW-11	WW	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	8/6/09	14:43	1	Dissolved Hexavalent Chromium										* Filtered in the field
																		* No CAS CAC received w/ bottles
																		so had to use this
																		CAC.
																		* EPA Method 218.6

Possible Hazard Identification ☐ Hazardous ☒ Non-Hazardous ☐ Radioactive **Sample Disposition** ☒ Dispose as appropriate ☐ Return ☐ Archive

Number of Containers:	Relinquished By (signature)	Printed Name/Affiliation	Date/Time	Received By (signature)	Printed Name/Affiliation
Cooler Number:	<i>Brandon Peebles</i>	Brandon Peebles	8/6/09 17:49		
Temp upon receipt (°C):	Relinquished By (signature)	Printed Name/Affiliation	Date/Time	Received By (signature)	Printed Name/Affiliation
Sample Received on Ice or Refrigerated from Client: Yes / No	Relinquished By (signature)	Printed Name/Affiliation	Date/Time	Received For Lab By (signature)	Printed Name/Affiliation

6.06.07 ** Surcharge May Apply to add QC Packages ** WHITE - LAB YELLOW - REPORT PINK - CLIENT RECEIPT Page 1 2

		Baltimore Division Baltimore, MD 21224 Tel: 410-633-1800 Fax: 410-633-6553 www.microbac.com		Sample Submittal Chain of Custody Record		Work Order Number: _____											
		Page <u>1</u> of <u>1</u>															
Client Name <u>SALC</u>		Project <u>EPA CCW</u>		Turnaround Time (Required)		QC and EDD Type (Required)											
Address <u>12100 Sunset Hills Rd</u>		Location <u>Manchester, OH</u>		<input checked="" type="checkbox"/> Standard		<input type="checkbox"/> Level I (NAC)											
City, State, Zip <u>Reston, VA 20190</u>		PO # _____		<input type="checkbox"/> RUSH* (notify lab)		<input type="checkbox"/> Level II **											
Contact <u>Brandon Peebles</u>		Compliance Monitoring? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(needed by) _____		<input checked="" type="checkbox"/> Level III **											
Telephone # <u>703-375-2264</u>		(1) Agency/Program <u>EPA</u>				<input type="checkbox"/> Level IV **											
Sampled by (PRINT) <u>Brandon Peebles</u>		Sampler Signature <u>[Signature]</u>		Sampler Phone # <u>703-375-2264</u>		Format: <u>Excel</u>											
Send Report via <input checked="" type="checkbox"/> e-mail (address) <u>dpb@salc.com</u>		<input type="checkbox"/> Mail <input type="checkbox"/> Telephone <input type="checkbox"/> Fax (fax #) _____		Comments: _____													
* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify) _____																	
Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analysis								Comments	
								TCLP	Volatiles	SVOC/PCB	Metals	Ignitability	Reactivity, PH	PH	TSS		
TW-10	WW	<input checked="" type="checkbox"/>			8/6/09	13:45	12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
TW-12	WW	<input checked="" type="checkbox"/>			8/6/09	14:41	2			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
TW-13	WW	<input checked="" type="checkbox"/>			8/6/09	15:05	2			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
Possible Hazard Identification <input type="checkbox"/> Hazardous <input checked="" type="checkbox"/> Non-Hazardous <input type="checkbox"/> Radioactive		Sample Disposition <input checked="" type="checkbox"/> Dispose as appropriate <input type="checkbox"/> Return <input type="checkbox"/> Archive															
Number of Containers: _____	Relinquished By (signature) <u>[Signature]</u>		Printed Name/Affiliation <u>Brandon Peebles</u>		Date/Time <u>8/6/09 17:27</u>		Received By (signature) _____		Printed Name/Affiliation _____								
Cooler Number: _____	Relinquished By (signature) _____		Printed Name/Affiliation _____		Date/Time _____		Received By (signature) _____		Printed Name/Affiliation _____								
Temp upon receipt(°C): _____	Relinquished By (signature) _____		Printed Name/Affiliation _____		Date/Time _____		Received for Lab By (signature) _____		Printed Name/Affiliation _____								
Sample Received on Ice or Refrigerated from Client: Yes / No	Relinquished By (signature) _____		Printed Name/Affiliation _____		Date/Time _____		Received for Lab By (signature) _____		Printed Name/Affiliation _____								

		Baltimore Division Baltimore, MD 21224 Tel: 410-633-1800 Fax: 410-633-6553 www.microbac.com		Sample Submittal Chain of Custody Record		Work Order Number: _____																
		Page <u>1</u> of <u>1</u>																				
Client Name <u>SAIC</u>		Project <u>EPA CCW</u>		Turnaround Time (Required)		QC and EDD Type (Required)																
Address <u>12100 Sunset Hills Rd</u>		Location <u>Manchester, OH</u>		<input checked="" type="checkbox"/> Standard		<input type="checkbox"/> Level I (NAC) <input checked="" type="checkbox"/> EDD																
City, State, Zip <u>Reston, VA 20190</u>		PO # _____		<input type="checkbox"/> RUSH* (notify lab)		<input type="checkbox"/> Level II **																
Contact <u>Brandon Peebles</u>		Compliance Monitoring? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(needed by) _____		<input checked="" type="checkbox"/> Level III **																
Telephone # <u>703-375-2264</u>		(1) Agency/Program <u>EPA</u>				<input type="checkbox"/> Level IV **																
Sampled by (PRINT) <u>Brandon Peebles</u>		Sampler Signature <u>[Signature]</u>		Sampler Phone # <u>703-375-2264</u>		Format: <u>Excel</u>																
Send Report via <input checked="" type="checkbox"/> e-mail (address) <u>peeblesb@saic.com</u>		<input checked="" type="checkbox"/> Mail <input type="checkbox"/> Telephone <input type="checkbox"/> Fax (fax #) _____																				
* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify) _____																						
Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analysis								Comments						
								ICLP	Volatiles	SWC / PCBs	Metals	Toxicology	Reactivity	pH								
JW-14	WW	<input checked="" type="checkbox"/>			8/6/09	16:12	12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
Possible Hazard Identification		<input type="checkbox"/> Hazardous <input checked="" type="checkbox"/> Non-Hazardous <input type="checkbox"/> Radioactive		Sample Disposition		<input checked="" type="checkbox"/> Dispose as appropriate <input type="checkbox"/> Return <input type="checkbox"/> Archive																
Number of Containers:	Relinquished By (signature)	Printed Name/Affiliation		Date/Time	Received By (signature)	Printed Name/Affiliation																
Cooler Number:	<u>[Signature]</u>	<u>Brandon Peebles</u>		<u>8/6/09 17:19</u>																		
Temp upon receipt(°C):	Relinquished By (signature)	Printed Name/Affiliation		Date/Time	Received By (signature)	Printed Name/Affiliation																
Sample Received on Ice or Refrigerated from Client: Yes / No																						
	Relinquished By (signature)	Printed Name/Affiliation		Date/Time	Received for Lab By (signature)	Printed Name/Affiliation																

		Baltimore Division Baltimore, MD 21224 Tel: 410-633-1800 Fax: 410-633-6553 www.microbac.com		Sample Submittal Chain of Custody Record		Work Order Number: _____											
		Page <u>1</u> of <u>1</u>															
Client Name <u>SAC</u>		Project <u>EPA CCW</u>		Turnaround Time (Required)		QC and EDD Type (Required)											
Address <u>12100 Sunset Hills Rd</u>		Location <u>Manchester OH</u>		<input checked="" type="checkbox"/> Standard		<input type="checkbox"/> Level I (NAC)											
City, State, Zip <u>Roseton, VA 20190</u>		PO # _____		<input type="checkbox"/> RUSH* (notify lab)		<input type="checkbox"/> Level II **											
Contact <u>Brandon Peebles</u>		Compliance Monitoring? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(needed by) _____		<input checked="" type="checkbox"/> Level III **											
Telephone # <u>703-375-2264</u>		(1) Agency/Program <u>EPA</u>				<input type="checkbox"/> Level IV **											
Sampled by (PRINT) <u>Brandon Peebles</u>		Sampler Signature <u>[Signature]</u>		Sampler Phone # <u>703-375-2264</u>		Format: <u>Excel</u>											
Send Report via <input checked="" type="checkbox"/> e-mail (address) <u>peeblesb@sac.com</u>		<input type="checkbox"/> Mail <input type="checkbox"/> Telephone <input type="checkbox"/> Fax (fax #) _____		Comments: _____													
* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify) _____																	
Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analysis							Comments		
								PH	TCLP	Volatiles	SWOC / PCB	Metals	Toxicity	Reactivity		PH	
JW-15	WW	<input checked="" type="checkbox"/>			8/7/09	8:29	1	<input checked="" type="checkbox"/>									
JW-17	WW	<input checked="" type="checkbox"/>			8/7/09	10:05	12		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
JW-19	WW	<input checked="" type="checkbox"/>			8/7/09	9:17	1	<input checked="" type="checkbox"/>									
Possible Hazard Identification		<input type="checkbox"/> Hazardous <input checked="" type="checkbox"/> Non-Hazardous		<input type="checkbox"/> Radioactive		Sample Disposition		<input checked="" type="checkbox"/> Dispose as appropriate		<input type="checkbox"/> Return		<input type="checkbox"/> Archive					
Number of Containers: _____		Relinquished By (signature) <u>[Signature]</u>		Printed Name/Affiliation <u>Brandon Peebles</u>		Date/Time <u>8/7/09 15:42</u>		Received By (signature) _____		Printed Name/Affiliation _____							
Cooler Number: _____		Relinquished By (signature) _____		Printed Name/Affiliation _____		Date/Time _____		Received By (signature) _____		Printed Name/Affiliation _____							
Temp upon receipt(°C): _____		Relinquished By (signature) _____		Printed Name/Affiliation _____		Date/Time _____		Received for Lab By (signature) _____		Printed Name/Affiliation _____							
Sample Received on Ice or Refrigerated from Client: Yes / No		Relinquished By (signature) _____		Printed Name/Affiliation _____		Date/Time _____		Received for Lab By (signature) _____		Printed Name/Affiliation _____							

		Baltimore Division Baltimore, MD 21224 Tel: 410-633-1800 Fax: 410-633-6553 www.microbac.com		Sample Submittal Chain of Custody Record		Work Order Number: 09H10253											
		Page <u>1</u> of <u>1</u>															
Client Name <u>SAIC</u>		Project <u>EPA CCW</u>		Turnaround Time (Required)		QC and EDD Type (Required)											
Address <u>12100 Sunset Hills Rd</u>		Location <u>Manchester, OH</u>		<input checked="" type="checkbox"/> Standard		<input checked="" type="checkbox"/> EDD											
City, State, Zip <u>Reston, VA 20190</u>		PO #		<input type="checkbox"/> RUSH* (notify lab)		<input type="checkbox"/> Level I (NAC) <input type="checkbox"/> Level II ** <input checked="" type="checkbox"/> Level III ** <input type="checkbox"/> Level IV **											
Contact <u>Brandon Peebles</u>		Compliance Monitoring? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(needed by)		Format: <u>Excel</u>											
Telephone # <u>703-375-2264</u>		(1) Agency/Program <u>EPA</u>				Comments:											
Sampled by (PRINT) <u>Brandon Peebles</u>		Sampler Signature <u>[Signature]</u>		Sampler Phone # <u>703-375-2264</u>													
Send Report via <input checked="" type="checkbox"/> e-mail (address) <u>peeblesb@saic.com</u>		<input type="checkbox"/> Mail <input type="checkbox"/> Telephone <input type="checkbox"/> Fax (fax #)															
* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)																	
Client Sample ID		Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analysis:							Comments	
									pH	TCLP	Volatiles	SVOC/POB	Metals	Ignitability	Reactivity, pH		
<u>JW-16</u>		<u>WW</u>	<input checked="" type="checkbox"/>			<u>8/7/09</u>	<u>8:48</u>	<u>1</u>	<input checked="" type="checkbox"/>								
<u>JW-18</u>		<u>WW</u>	<input checked="" type="checkbox"/>			<u>8/7/09</u>	<u>10:05</u>	<u>12</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Possible Hazard Identification		<input type="checkbox"/> Hazardous <input checked="" type="checkbox"/> Non-Hazardous <input type="checkbox"/> Radioactive		Sample Disposition		<input checked="" type="checkbox"/> Dispose as appropriate <input type="checkbox"/> Return <input type="checkbox"/> Archive											
Number of Containers: <u>2</u>		Relinquished By (signature) <u>[Signature]</u>		Printed Name/Affiliation <u>Brandon Peebles</u>		Date/Time <u>8/7/09 16:01</u>		Received By (signature) <u>[Signature]</u>		Printed Name/Affiliation <u>Brandon Peebles</u>		Date/Time <u>8/8/09 10:50</u>					
Cooler Number: <u>2</u>		Relinquished By (signature)		Printed Name/Affiliation		Date/Time		Received By (signature)		Printed Name/Affiliation		Date/Time					
Temp upon receipt (°C): <u>4.6</u>		Relinquished By (signature)		Printed Name/Affiliation		Date/Time		Received By (signature)		Printed Name/Affiliation		Date/Time					
Sample Received on Ice or Refrigerated from Client: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Relinquished By (signature)		Printed Name/Affiliation		Date/Time		Received By (signature)		Printed Name/Affiliation		Date/Time					

APPENDIX C

LAB RESULTS

QUALIFIER	DESCRIPTION
#	QC not in acceptance limits.
A2	Results expressed as mg/L TCLP extract after performing total analysis of the sample and adjusting the result to reflect the 20 times dilution in the TCLP extraction procedure.
B	Analyte is found in method blank.
B1	Target analyte detected in method blank at or above reporting limit.
D	Sample Diluted
E3	Concentration estimated due to internal standard recoveries out of acceptance limits.
H1	Sample analyzed past maximum recommended holding time.
H6	Sample received past holding time; analysis best performed at time of collection.
L2	The LCS recovery was above the laboratory acceptance limits. The target analyte concentration was below the reporting limit. No negative impact on the data.
L3	The LCS recovery was below the laboratory acceptance limits. The reported result is estimated.
M1	The matrix spike recovery was out of acceptance limits. The post digestion spike recovery was acceptable.
M2	The matrix spike recovery was biased high. The reported result was below the reporting limit. No negative impact on the data.
M3	The matrix spike recovery was biased high, the LCS recovery was acceptable.
M4	The matrix spike recovery was biased high, the reported result is estimated.
M5	The matrix spike recovery was biased low, the reported result is estimated.
ND	Not Detected
R1	Sample Duplicate RPD was out of acceptance limits.
R2	MS/MSD RPD was out of acceptance limits. Recoveries met acceptance limits.
R3	Sample Duplicate RPD was out of acceptance limits. The result concentration was within 5 times the reporting limit and the difference was less than the reporting limit.
R4	MS/MSD RPD was out of acceptance limits.
S1	Surrogate recovery was above laboratory acceptance limits. No negative impact on the data.
S3	Surrogate recovery was below laboratory acceptance limits. Re-extraction/re-analysis confirms low recovery due to matrix interference.
S4	Surrogate recovery was below laboratory acceptance limits. Reported data is estimated.
U	Sample concentration is less than the MDL.
V1	CCV recovery was above acceptance limits. The concentration was below the reporting limit.
V4	ICV recovery was above acceptance limits. The concentration was below the reporting limit.
V6	CCV recovery was below acceptance limits. The reported result is estimated.
Z12	NA
Z8	>200 °F

VOC DATA		Aqueous Samples																Soil Samples															
Field Sample ID	JW-10	JW-14	JW-17	JW-18	JW-3	JW-36	JW-4	JW-5	JW-8	JW-9	JS-1	JS-2	JS-3	JS-5																			
Lab Sample ID	09H0207-11	09H0207-14	09H0253-02	09H0253-05	09H0130-04	09H0130-05	09H0207-03	09H0207-02	09H0207-04	09H0207-09	09H0130-03	09H0130-06	09H0207-01	09H0207-08																			
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Solid	Solid	Solid	Solid																			
Sample Date	08/06/2009 13:45	08/06/2009 18:12	08/07/2009 10:05	08/07/2009 10:05	08/05/2009 14:32:00	08/05/2009 14:26:00	08/06/2009 08:10:00	08/06/2009 09:21:00	08/06/2009 11:34:00	08/06/2009 11:46:00	08/05/2009 11:20:00	08/05/2009 15:07:00	08/06/2009 08:34:00	08/06/2009 15:10:00																			
Units	ug/l	Lab Q	DVQ	ug/l	Lab Q	DVQ	ug/l	Lab Q	DVQ	ug/l	Lab Q	DVQ	ug/kg	Lab Q	DVQ	ug/kg	Lab Q	DVQ	ug/kg	Lab Q	DVQ	ug/kg	Lab Q	DVQ	ug/kg	Lab Q	DVQ	ug/kg	Lab Q	DVQ	ug/kg	Lab Q	DVQ
1,1,1,2-Tetrachloroethane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
1,1,1-Trichloroethane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
1,1,2,2-Tetrachloroethane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
1,1,2,2-Tetrachloroethylene	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
1,1,2-Trichloroethane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
1,1,2-Trichloroethylene	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
1,1-Dichloroethane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
1,1-Dichloroethylene	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
1,1-Dichloropropylene	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
1,2,3-Trichlorobenzene	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
1,2,3-Trichloropropane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
1,2,4-Trimethylbenzene	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
1,2-Dibromo-3-chloropropane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
1,2-Dibromoethane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
1,2-Dichloroethane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
1,2-Dichloropropane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
1,3,5-Trimethylbenzene	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
1,3-Dichloropropane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
2,2-Dichloropropane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
2-Chloroethyl Vinyl Ether	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
2-Chlorotoluene	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
4-Chlorotoluene	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
4-Isopropyltoluene	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Acetone	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Acetonitrile	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Acrolein	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Acrylonitrile	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Allyl Chloride (3-Chloropropyl Chloride)	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Benzene	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Bromobenzene	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Bromochloromethane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Bromodichloromethane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Bromoform	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Bromomethane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Butylbenzene	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Carbon disulfide	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Carbon Tetrachloride	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Chlorobenzene	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Chloroethane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Chloroform	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Chloromethane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Chloroprene	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
cis-1,2-Dichloroethylene	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
cis-1,3-Dichloropropylene	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Dibromochloromethane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Dibromomethane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Dichlorodifluoromethane	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D
Ethyl Methacrylate	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND	U	D	ND		

SVOC DATA		Aqueous Samples																Soil Samples																																																							
Field Sample ID	JW-10	JW-14						JW-17						JW-18						JW-3						JW-4						JW-5						JW-8						JW-9						JS-1						JS-2						JS-3						JS-5					
Lab Sample ID	09H0207-11	09H0207-14						09H0253-02						09H0253-05						09H0130-04						09H0207-03						09H0207-02						09H0207-04						09H0207-09						09H0130-03						09H0130-06						09H0207-01						09H0207-08					
Matrix	Water	Water						Water						Water						Water						Water						Water						Water						Solid						Solid						Solid						Solid											
Sample Date	08/06/2009 13:45:00	08/06/2009 16:12:00						08/07/2009 10:06:00						08/07/2009 10:05:00						08/05/2009 14:32:00						08/06/2009 08:10:00						08/06/2009 09:21:00						08/06/2009 11:24:00						08/06/2009 11:48:00						08/05/2009 11:20:00						08/05/2009 15:07:00						08/06/2009 08:34:00						08/06/2009 15:10:00					
Units	ug/l	Lab Q	DVG	ug/l	Lab Q	DVG	ug/l	Lab Q	DVG	ug/l	Lab Q	DVG	ug/l	Lab Q	DVG	ug/l	Lab Q	DVG	ug/l	Lab Q	DVG	ug/l	Lab Q	DVG	ug/l	Lab Q	DVG	ug/kg	Lab Q	DVG	ug/kg	Lab Q	DVG	ug/kg	Lab Q	DVG	ug/kg	Lab Q	DVG																																		
1,2,4-Trichlorobenzene	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
1,2-Dichlorobenzene	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
1,2-Diphenylhydrazine	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
1,3-Dichlorobenzene	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
1,4-Dichlorobenzene	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
2,4,5-Trichlorophenol	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
2,4,6-Trichlorophenol	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
2,4-Dichlorophenol	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
2,4-Dimethylphenol	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
2,4-Dinitrophenol	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
2,4-Dinitrotoluene	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
2,6-Dinitrotoluene	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
2-Chloronaphthalene	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
2-Chlorophenol	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
2-Methylnaphthalene	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	1300			ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
2-Methylphenol	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U		R	ND	U	R	ND	U	R	ND	U	R	ND	U	R																																				
2-Nitroaniline	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
2-Nitrophenol	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
3,3'-Dichlorobenzidine	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
3-Nitroaniline	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U		R	ND	U	R	ND	U	R	ND	U	R	ND	U	R																																				
4,6-Dinitro-2-methylphenol	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
4-Bromophenyl-phenylether	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
4-Chloro-3-methylphenol	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
4-Chloroaniline	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
4-Chlorophenyl-phenylether	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
4-Methylphenol, 3-Methylphenol	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U		R	ND	U	R	ND	U	R	ND	U	R	ND	U	R																																				
4-Nitroaniline	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
4-Nitrophenol	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
Acenaphthene	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
Acenaphthylene	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
Aniline	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
Anthracene	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
Benzo(a)anthracene	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
Benidine	ND	L3, U		ND	L3, U		ND	L3, U		ND	L3, U		ND	L3, U		ND	L3, U		ND	L3, U	UJ	ND	U		UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																	
Benzo(a)pyrene	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
Benzo(b)fluoranthene	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
Benzo(g,h,i)perylene	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
Benzo(k)fluoranthene	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
Benzoic Acid	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND	E3, U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
Benzyl alcohol	ND	U	R	ND	U	R	ND	U		ND	U		ND	U	R	ND	U	R	ND	E3, U	UJ	ND	U		ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ	ND	U	UJ																																		
bis(2-Chloroethoxy)methane	ND	U		ND	U		ND	U		ND	U		ND	U		ND	U		ND																																																						

PCB DATA		Aqueous Samples																Soil Samples																																										
Field Sample ID	JW-10					JW-14					JW-17					JW-18					JW-4					JW-5					JW-8					JW-9					JS-1					JS-2					JS-3					JS-5				
Lab Sample ID	09H0207-11					09H0207-14					09H0253-02					09H0253-05					09H0207-03					09H0207-02					09H0207-04					09H0207-09					09H0130-03					09H0130-06					09H0207-01					09H0207-08				
Matrix	Water					Water					Water					Water					Water					Water					Water					Water					Solid					Solid					Solid					Solid				
Sample Date	08/05/2009 13:45:00					08/05/2009 16:12:00					08/07/2009 10:05:00					08/07/2009 10:05:00					08/06/2009 08:10:00					08/06/2009 08:21:00					08/06/2009 11:24:00					08/05/2009 11:48:00					08/05/2009 11:20:00					08/05/2009 15:07:00					08/06/2009 08:34:00					08/06/2009 15:10:00				
Units	ug/l	Lab Q	DVO		ug/l	Lab Q	DVO		ug/l	Lab Q	DVO		ug/l	Lab Q	DVO		ug/l	Lab Q	DVO		ug/l	Lab Q	DVO		ug/l	Lab Q	DVO		ug/l	Lab Q	DVO		ug/kg	Lab Q	DVO		ug/kg	Lab Q	DVO		ug/kg	Lab Q	DVO		ug/kg	Lab Q	DVO													
Aroclor 1016	ND	U			ND	U			ND	U			ND	U			ND	U			ND	S4, U	UJ	ND	U			ND	U			ND	L3, U	UJ		ND	L3, U	UJ		ND	L3, U	UJ		ND	L3, S4, U	UJ														
Aroclor 1221	ND	U			ND	U			ND	U			ND	U			ND	U			ND	S4, U	UJ	ND	U			ND	U			ND	U			ND	U			ND	U			ND	S4, U	UJ														
Aroclor 1232	ND	U			ND	U			ND	U			ND	U			ND	U			ND	S4, U	UJ	ND	U			ND	U			ND	U			ND	U			ND	U			ND	S4, U	UJ														
Aroclor 1242	ND	U			ND	U			ND	U			ND	U			ND	U			ND	S4, U	UJ	ND	U			ND	U			ND	U			ND	U			ND	U			ND	S4, U	UJ														
Aroclor 1248	ND	U			ND	U			ND	U			ND	U			ND	U			ND	S4, U	UJ	ND	U			ND	U			ND	U			ND	U			ND	U			ND	S4, U	UJ														
Aroclor 1254	ND	U			ND	U			ND	U			ND	U			ND	U			ND	S4, U	UJ	ND	U			ND	U			ND	U			ND	U			ND	U			ND	S4, U	UJ														
Aroclor 1260	ND	U			ND	U			ND	U			ND	U			ND	U			ND	S4, U	UJ	ND	U			ND	U			ND	U			ND	U			ND	U			ND	S4, U	UJ														
Total PCBs	ND	U			ND	U			ND	U			ND	U			ND	U			ND	S4, U	UJ	ND	U			ND	U			ND	U			ND	U			ND	U			ND	S4, U	UJ														

PESTICIDE/HERBICIDE/PCB DATA			
Field Sample ID	JW-3		
Lab Sample ID	09H0130-04		
Matrix	Water		
Sample Date	08/05/2009 14:32:00		
Units	ug/l	Lab Q	DVQ
Aldrin	ND	U	
alpha-BHC	ND	U	
alpha-Chlordane	ND	U	
Aroclor 1016	ND	U	
Aroclor 1221	ND	U	
Aroclor 1232	ND	U	
Aroclor 1242	ND	U	
Aroclor 1248	ND	U	
Aroclor 1254	ND	U	
Aroclor 1260	ND	U	
beta-BHC	ND	U	
delta-BHC	ND	U	
Dieldrin	ND	U	
Endosulfan I	ND	U	
Endosulfan II	ND	U	
Endosulfan sulfate	ND	U	
Endrin	ND	U	
Endrin aldehyde	ND	U	
Endrin ketone	ND	U	
gamma-BHC	ND	U	
gamma-Chlordane	ND	U	
Heptachlor	ND	U	
Heptachlor epoxide	ND	U	
Methoxychlor	ND	U	
p,p-DDD	ND	U	
p,p'-DDE	ND	U	
p,p-DDT	ND	U	
Technical Chlordane	ND	U	
Total PCBs	0.0	U	
Toxaphene	ND	U	
2,4,5-TP (Silvex)	ND		
2,4-D	ND		
2,4,5-T	ND		
2,4-DB	ND		
Dalapon	ND		
Dicamba	ND		
Dichlorprop	ND		
Dinoseb	ND		
MCPA	ND		
MCPP	ND		

Enforcement Confidential

APPENDIX D

COMPLETE LAB DATA PACKAGE

See attached electronic CD